Reinforcing Traditional Neighborhood Character through Density Bonuses

City of Concord, New Hampshire

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Revised February, 2009

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Reinforcing Traditional Neighborhood Character through Density Bonuses

1. Purpose

The City of Concord is exploring the possibility of adopting a Transfer of Development Rights (TDR) regulation that would limit sprawl while promoting the preservation of open space in the rural areas of the city – outside of the Urban Growth Boundary (UGB). Implicit in this TDR proposal is the presumption that residential development densities outside the UGB would be lessened and increased densities would be encouraged inside the UGB (primarily in the present RM and RS zoning districts) provided that certain conditions of development can be satisfied. With public sewer service, the existing RM & RS zoning districts require 12,500 square foot lots (.29 acres) per dwelling unit which equates to about 3 dwelling units per acre including the area for public roads with a minimum 100 foot lot frontage.

Increasing the density in these zoning districts utilizing units transferred as part of a TDR program will require a different design option than cluster subdivisions that are currently permitted. Planned Unit Developments (PUDs) are also permitted in the RM (but not the RS) District which currently allow for 5 units per buildable acre, but the regulations are not always palatable to developers, and the resultant site and building designs have not always found acceptance with the neighbors. An alternative design option for raising density in a manner which may be a more acceptable model to both developer and neighbor may lie in emulating the design of Concord's existing historic neighborhoods, which are highly valued as places to live, raise families, and foster a strong sense of community or social capital. This design model may lend itself to the implementation of a TDR program but also may prove to be valid as an alternative development option to PUD's and developments such as attached and multifamily dwellings which may be implemented at higher densities in other zoning districts.

The principal motivation for this analysis is to determine if residential densities in Concord's well established neighborhoods could be replicated in new or infill housing circumstances through amendments to the City's development regulations. If the analysis indicates that the characteristics of older neighborhoods can be replicated they could then be codified as an overlay bonus provision to existing zones. This would enable developers to acquire open space outside the UGB (or contribute to an open space acquisition fund) in exchange for additional density inside the UGB.

2. Background

As a city that prides itself as having livable neighborhoods, Concord has been criticized for not providing zoning that permits new neighborhoods to be built that offer similar physical characteristics to the older neighborhoods. Over the past decade, there has been a growing movement across the country to capture the physical essence of the classic New England village or neighborhood and find ways to create newer versions of the same. The planning and architecture professions have been focusing on this concept that has three major labels – Traditional Neighborhood Development (or TND), Form Based Zoning and New Urbanism (hereinafter collectively referred to as TND). One of the leading questions in this effort is to define exactly what it is that creates the physical setting for a traditional Concord neighborhood.

Figure 1 - THE URBAN-TO-RURAL TRANSECT[1]
Highlighting the focus of this report

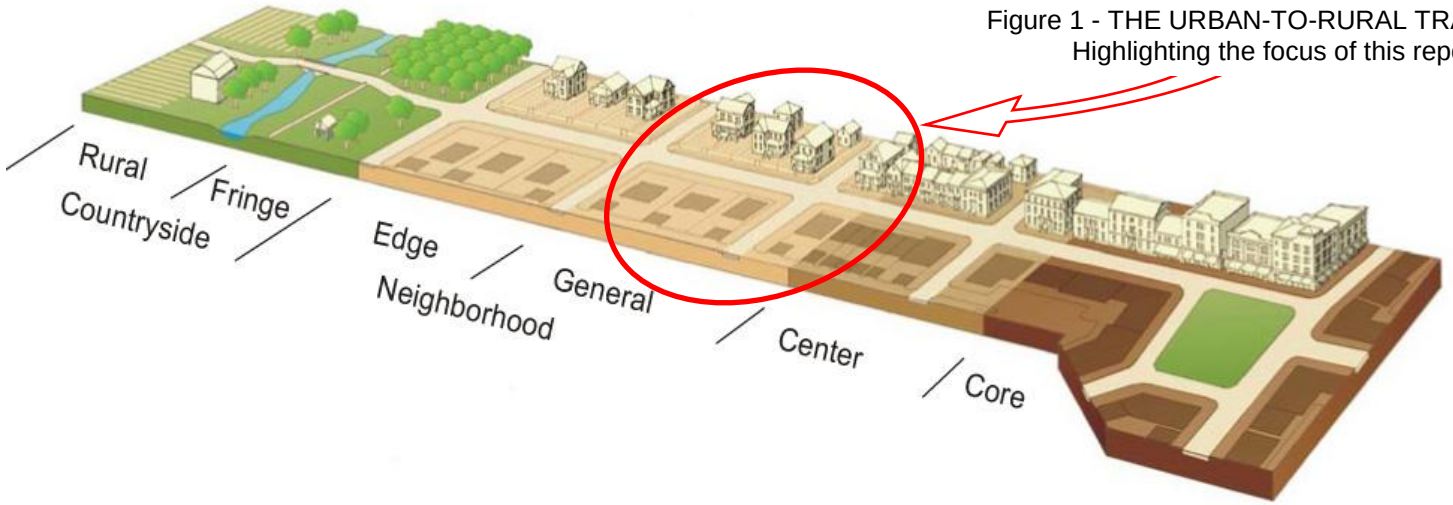


Figure 1 is useful in illustrating the context in which different TND and form based zoning provisions are applied. The City of Concord has examples of each of the **"transect"** types from rural to urban core. This report focuses on examining the City's current zoning for the "Neighborhood Edge" transect and exploring how to produce more compact residential character that is represented at the transect dividing line between "Neighborhood General" and "Center" (circled in red). It is this very scale and density that typifies Concord's existing older neighborhoods. One of the advantages of this illustration is that it not only depicts what the urban form is in a two-dimensional plan view (foreground of the illustration) as well in a three-dimensional streetscape elevation view (background).

What are the key elements that contribute to Concord's Traditional Neighborhood Character?

- Dense, compact design
- Pedestrian scale
- Architectural variety and quality
- Access to public open space
- Efficient Use of city's infrastructure investment
- Strong sense of social connectivity
- Variety of housing types and densities
- Close proximity to retail and employment
- Interconnected streets
- Variety of transportation choices

Not surprisingly, these are also the same characteristics that TND advocates are seeking to create. The leading question for Concord is – What are the physical attributes that have shaped the highly desirable nature of its neighborhoods? To answer this question, this study has examined ten different residential blocks in the south and west ends adjacent to downtown Concord and in Penacook Village. The ten study blocks comprise 174 separate land parcels containing 333 dwelling units. The blocks were chosen primarily for their variations in residential density and housing types. The study blocks are also very similar in visual character to the General Neighborhood/Center transect shown in figure 1.

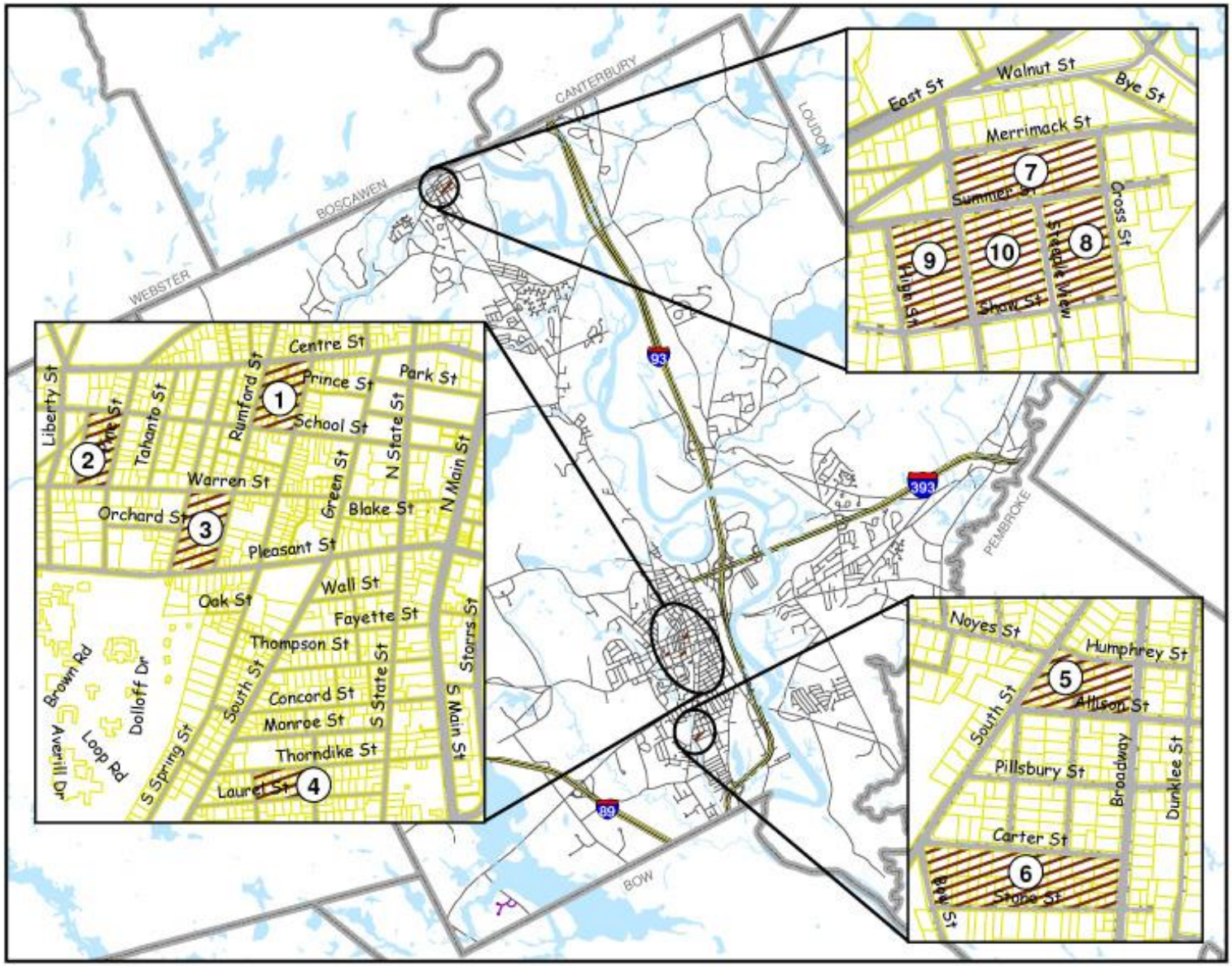


Figure 2 - Location of Study Blocks

3. Concord Neighborhood Characteristics

3.1 Residential Lot Characteristics

Table 1 summarizes the ten block site analysis completed for this study to shed some light on what the key features are in Concord's well established neighborhoods (detailed block information can be found in the appendix).

Table 1
Existing Neighborhood Site Conditions and Density Analysis
City of Concord, NH
SUMMARY CHARACTERISTICS

Block No.	Block Boundaries	Gross Density	Net Density	Avg. lot Size	Avg. Width	Street Bldg-Bldg Width	% Open Space	Bldg SF/DU	Lot area Per DU	Pkg Per DU	Open Space Per DU
1	Centre/N.Spring/School/Rumford	13.81	19.31	4912	56	63	51%	1207	2717	1.83	1570
2	Warren/Holt/School/Pine	6.73	8.91	6469	64	77	66%	1744	5572	2.40	3936
3	Warren/Merrimack/Pleasant/Rumford	9.19	11.51	10839	85	79	58%	1474	5002	2.28	3300
4	Thorndike/Grove/Laurel/Pierce	9.75	12.44	6658	68	54	59%	1176	3866	2.46	2361
5	Broadway/Allison/Kimball/Humphrey/South	5.19	7.62	7163	77	84	68%	1626	6062	3.08	4327
6	Carter/Broadway/Stone/Bow	4.27	5.20	8936	61	81	73%	1514	8687	3.37	6640
7	Merrimack/Cross/Summer/Community	7.78	10.79	8748	85	62	60%	1455	5089	2.41	3497
8	Summer/Cross/Shaw/SteepleView	3.83	5.85	8276	73	79	73%	1346	7575	2.67	5686
9	Summer/Community/Shaw/High	9.36	12.31	11543	86	63	70%	1217	7549	2.38	5956
10	Summer/SteepleView/Shaw/Community	8.68	11.34	11722	88	68	68%	947	6249	2.18	4802
	Average	7.86	10.53	8527	74	71	65%	1371	5837	2.51	4207
	Median	8.23	11.06	8512	75	72	67%	1400	5817	2.40	4132
	Minimum	3.83	5.20	4912	56	54	51%	947	2717	1.83	1570
	Maximum	13.81	19.31	11722	88	84	73%	1744	8687	3.37	6640

3.1.1 Residential Density

The blocks in Concord that were evaluated for this analysis have **gross densities** ranging from a low of 3.8 du/a (dwelling units per acre) to a high of 13.8 du/a with an overall average density of 7.9 du/a. **Gross du/a** figures include the actual lot area for each residential structure plus the area in front of the lot used for the city street and the public right-of-way. This is a more relevant figure when evaluating the overall residential densities on larger undeveloped sites where much of the density bonus discussion from this study is expected to be applied.

Figure 3 ***- Comparison of Overall Study Block Densities to In-town Zoning Requirements***

	Avg. Gross Density	Sq. Ft. Per DU	Avg. Net Density	Sq. Ft. Per DU
Study Block Densities	7.9 DU/Acre	5,542	10.5 DU/Acre	4,137
	Gross Density Range	Sq. Ft./DU Range	Net Density Range	Sq. Ft./DU Range
Existing RS Zone Density	2.9 DU/Acre	15,000	3.48 DU/Acre	12,500
Existing RN Zone Density	3.6-11.5 DU/Acre	3,800-12,000	4.3-13.1 DU/Acre	3,333-10,000
Existing RD Zone Density	4.6-15.2 DU/Acre	2,875-9,375	5.8-17.4 DU/Acre	2,500-7,500

Zoning ordinance density tables usually refer to lot sizes and number of units per acre of built or subdivided property – or **net density**. The difference between gross and net density is the amount of land that is consumed by streets and public rights of way. For all of the blocks studied for this report, public rights of way make up exactly 25% of the gross acreage. When the roads are factored out of that calculation – the resulting **net densities** range from 5.2 du/a to 19.3 du/a with an average of 10.5 du/a. The table above shows that for the 174 properties studied for this report, the gross density per dwelling unit is 5,542 square feet with the net density being 4,137 square feet per unit. The most notable lot area per dwelling unit figure is for study block 1 (Centre/N.Spring/School/Rumford). With an average of only 2,717 square feet of lot area per dwelling unit this block is significantly denser than any other block studied. Key characteristics of this study block are the general lack of landscaped area around the building, minimal back yards and the shortage of parking.

By comparison, the net zoning requirements for dwelling unit conversions in the in-town zoning districts of RD, RN and RS range from 3.48 to 17.4 du/a. From table 1 nearly all of the study blocks, which pre-date any zoning, fall within the range of densities allowed for conversions of existing structures in the zoning ordinance.

Summary: Gross residential densities of approximately eight dwelling units per acre are typical for Concord's older neighborhoods. Net residential densities average 10 dwelling units per acre or 4,100 square feet of lot area per dwelling unit.

3.1.2 Minimum Lot Sizes

Individual lot sizes in the study blocks show considerable variation – ranging from a low of 1,742 square feet to a high of 30,056 with the average being a little over 8,600. These numbers relate more to when individual blocks were developed rather than any larger city-wide objective since they predate zoning regulations. The density analysis above helps to define how much lot area is needed per dwelling unit on each lot but it does not define minimum lot size. The evaluation completed from the sample block data confirmed that lot sizes averaging less than 5,000 square feet were too small to accommodate a house, parking, building setbacks and a reasonable yard area. Even a single family home on a 5,000 square foot lot provides the minimum space necessary to meet these basic needs.

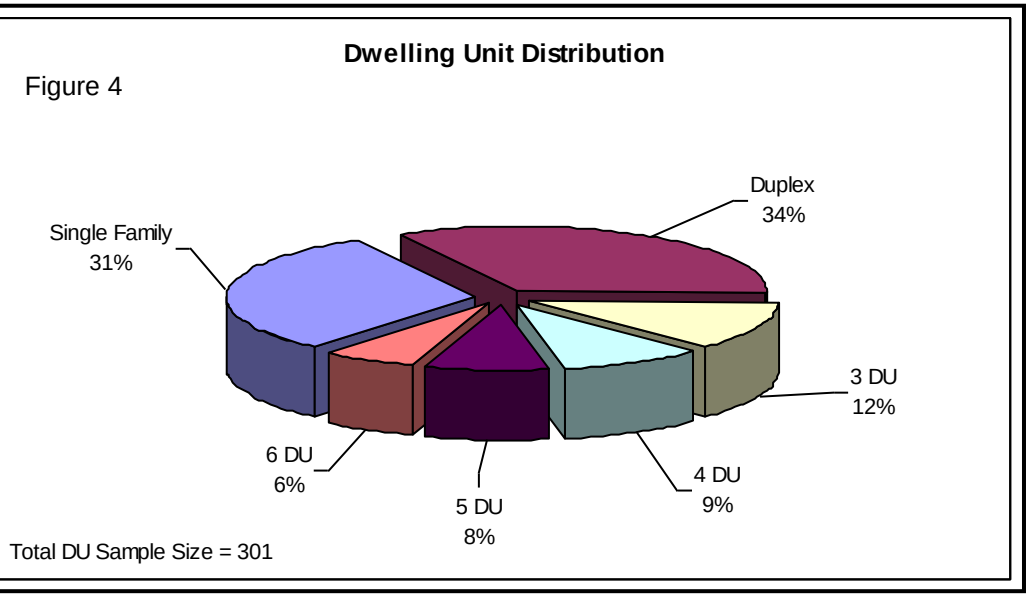
Summary: Lot sizes have considerable variability in the study blocks but the minimum lot size necessary to accommodate a single family home with parking and reasonable building setbacks needs to be at least 5,000 square feet in area.

3.1.3 Mixed Land Use

Another feature of Concord's older neighborhoods is that they are comprised of a variety of residential housing types. Of the 174 parcels studied, 54% of the parcels support single family homes and 29% support duplexes. Of the remaining parcels 7% have three family structures; 4% have four unit structures; 3% have five unit structures; and less than 2% of the parcels support six unit and eight unit buildings. Only three properties have buildings with more than six units each – two properties had eight units each and the Concord Housing Authority has a 16 unit elderly development in Penacook (study block 10). Because these three larger unit properties are the exception to what are otherwise modest density neighborhoods, it is reasonable to drop them from the dwelling unit mix calculations. This leaves a total of 301 dwelling units on the 174 properties in the study blocks and a dwelling unit distribution shown in figure 4.

Many older properties were initially developed as two family homes, or duplexes, and a significant number of larger single family homes have been divided into two or more dwelling units. As the pie chart at right indicates, single family units comprise 31% of the total 301 dwelling units studied and duplexes make up 34% of the total units. Three unit buildings make up 12% of the units studied. Four, five and six unit buildings add up to 9%, 8% and 6% of the total dwelling unit count respectively. This dwelling unit mix is surprisingly diverse and reflects that variety of ages and sizes of the buildings found in the study blocks.

Figure 4



Summary: Concord's older neighborhood are noted for their residential land use mix. A diversity of dwelling unit types should include about 31% single family, 34% duplex, 12% 3-DU, 9% 4-DU, 8% 5-DU and about 6% 6-DU structures.

3.1.4 Lot Coverage and Open Space

The square footage of lot area per dwelling unit provides an initial gauge of livability and neighborhood character but it misses the mark on two very practical elements that relate to aesthetics and marketability of a dwelling unit and neighborhood quality of life.

- Does the property provide landscaping and lawn areas to soften the hard urban landscape?
- Is there enough space available on the property to accommodate the number of parking spaces needed by the building's residents?

An evaluation of the proportion of a lot covered by buildings and dedicated to parking (whether paved or not) directly correlates to the amount of space that remains for lawns, landscaping and building setbacks. By definition, urban lots have

limited amounts of lawn area but below a certain level of open space, a sense of overcrowding becomes evident. Table 1 provides two options to quantify this important variable; (1) percent of open space per lot, and (2) open space per dwelling unit.

The percentage of Open Space figures (from Table 1) serve as a good first test to see if the amount of pervious surfaces on a lot (areas not covered by buildings or paving) are in keeping with the averages for Concord's older neighborhoods. Based on observations of the properties studied, 50% open space is not adequate in multi-unit lots to ensure a reasonable supply of lawn, landscaping and space around a building on an individual property. This becomes even more critical as the residential density on a lot increases. Based on observations of all the study blocks, lots with **60% or more open space** consistently provide an adequate amount of lot area for landscaping and separation from buildings on adjacent properties. If there are multiple residential units on a lot, requiring a minimum of **2,000 square feet of open space per dwelling unit** is necessary to provide an even better standard to ensure consistency with the present character of the city's older neighborhoods.

Summary: To ensure that the landscaping and visual quality of Concord's existing neighborhoods is maintained in newer development areas, a minimum of 2,000 square feet of open space per dwelling unit should be provided on each residential lot.

3.1.5 Public & Private Open Space

In the context of Traditional Neighborhood Development, urban neighborhoods can be divided into three different areas or zones of public and private space:

- Public Space – includes the city street, the landscape strip between the curb and the city sidewalk.
- Semi-Public & Semi-Private Space – the front yard open to view from the street is semi-public space. Front porches and fenced or visually buffered yard areas are semi-private since they provide a degree of screening or enclosure for the resident and there are clear visual clues that divide them from the public space. Corner lots, have a higher degree of semi-public space as a result of their dual street frontage.
- Private Space – depending on the configuration of the lot, this could include one or both side yards and the back yard which would provide privacy from view in the public street.

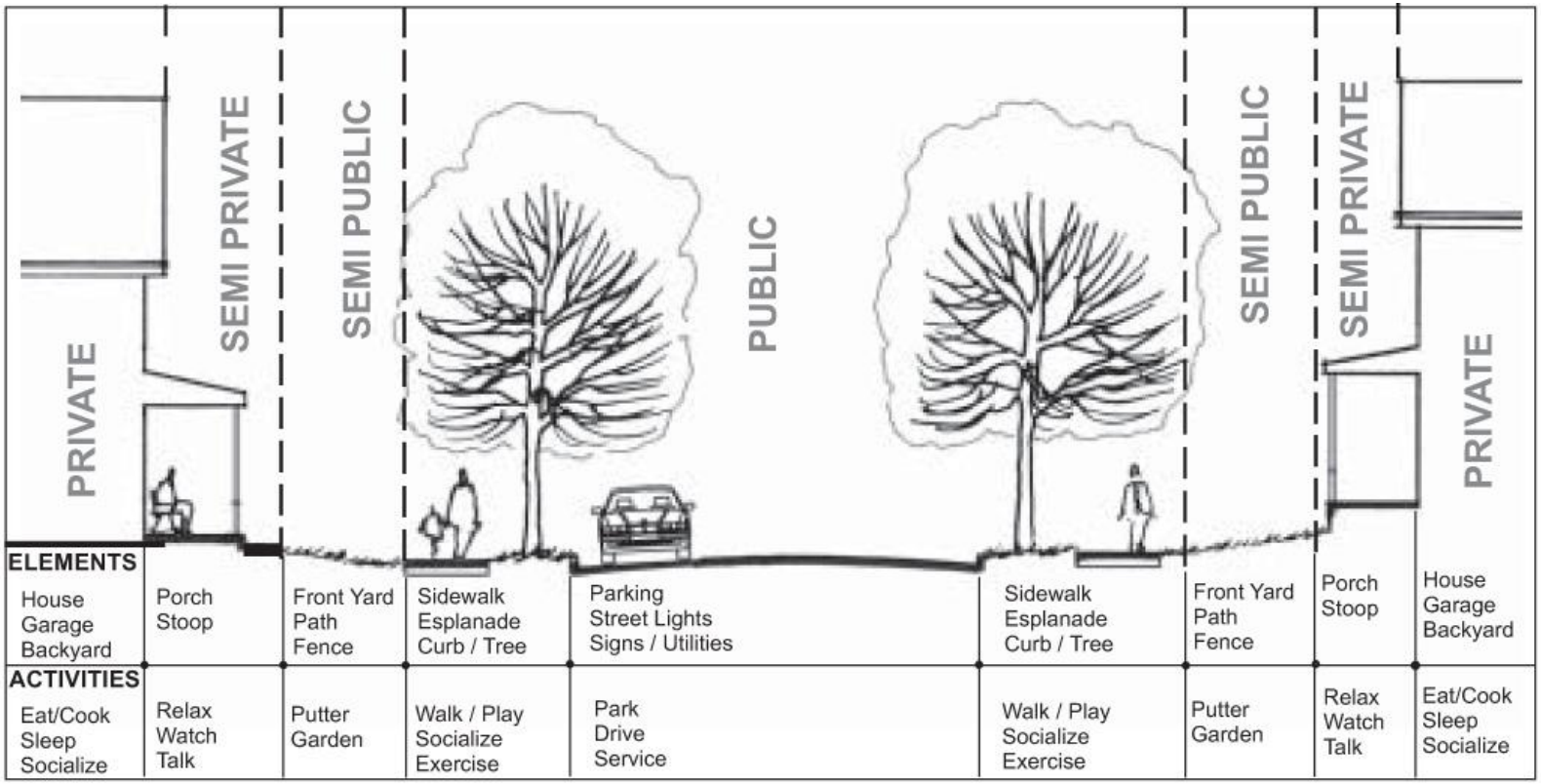


Figure 5: Public & Private Spaces in the City Streetscape[1]

Both the public and semi-public open spaces, together with the architecture of the buildings, establish the character of a neighborhood. The width of the street, landscape strip, sidewalk and the depth of the front yard setback also shape the character of the street. This is discussed in greater detail below, in the section on Building Placement and Streetscape Characteristics. The quantity and availability of private spaces provide the outdoor living area for the building occupants. It could be a courtyard on one side of a house or a backyard enclosed by landscaping or fences. Without adequate yard area, this outdoor living space cannot exist. Hence the justification for side and rear yard setback requirements.

[1] Source: Maine State Planning Office, Terrence J. DeWan & Associates & Kent Associates, The Great American Neighborhood – Contemporary Design Principles fro Building Livable Residential Communities (Augusta, Maine: Maine State Planning Office, 2004), p.32.

Summary: Properties in higher density residential neighborhoods need to include spaces that are part of the public's visual space as well as private space for the benefit of the property resident.

3.1.6 Parking & Driveways

Concord's older neighborhoods, including those evaluated for this study, were largely developed before the arrival of the automobile. Buildings were located near the street to maximize the private space in the rear yard. When cars arrived, driveways were usually added along the side of a home with parking and garages located in the side or rear yard – the only place available to park cars away from public view. With the growing trend for two or more cars per household, lots in older neighborhood front and side yards are being overtaken by car parking. This is particularly evident where older homes on relatively small lots have been converted to multi-unit buildings. On average, there are more than 2.5 parking spaces available per dwelling unit in

Figure 6 - Parking has overtaken the side and front yards on both of these corner lots.

all of the ten blocks studied for this report. On a block level, only study block #1 (Centre/N.Spring/School/Rumford Streets) provided less than two spaces per unit. The higher density of this study block coupled with limited space for parking results in a considerably denser feel since many properties have very limited room left for landscaping after space is consumed by parking and the building.

Wherever there is adequate lot area available, property owners have created formal parking spaces or the building tenants have created them informally. For the purposes of this study, parking spaces were counted based on the actual observed use on

the property whether they were paved or not. One of the prevalent parking solutions on smaller lots is to park several vehicles in the same driveway or parking area so that the car nearest the street will block other vehicles from leaving. Another creative but visually destructive solution is for cars to be parked on front and side lawn areas. In short order these temporary (and illegal by current zoning) spaces destroy lawns, become rutted mud pits in wet weather and eventually get paved, further reducing the available open space on the lot and eroding the visual quality of the neighborhood.

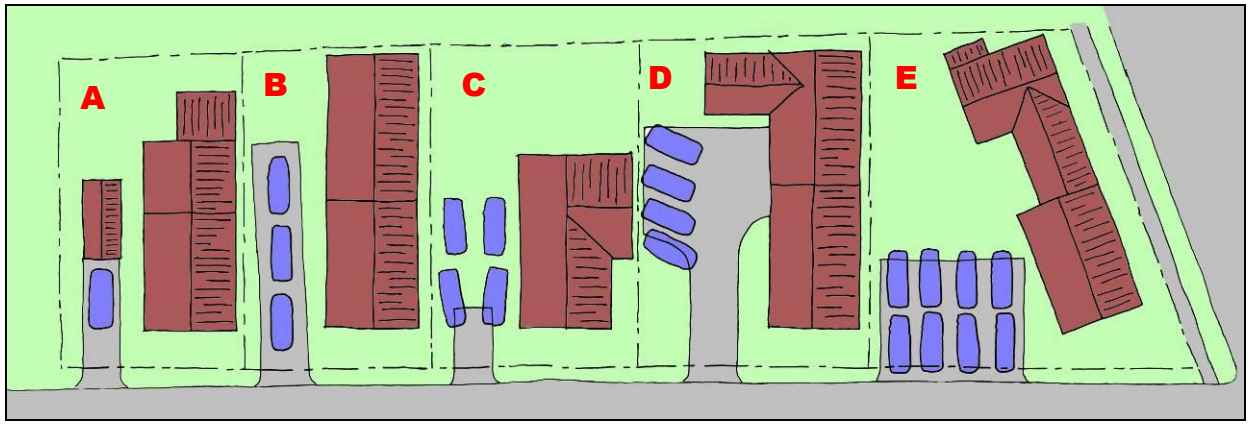


Figure 7 – Several examples of parking arrangements found in intown neighborhoods. Lot A has a standard single width driveway with a detached single car garage set back from the face of the building so that it does not detract from the streetscape. Lot B shows a typical single width driveway with multiple cars parked end-to-end. Lot C shows how a single, paved parking space has grown into four unpaved spaces that will very likely get paved at some time in the future – adding impervious cover and eliminating lawn area. Lot D has a paved parking lot in the side yard but the parking demand has begun to spill over onto the lawn. Lot E has a compact, double-deep parking

Parking placement on the lot is another important consideration. In new residential developments, one, two and three car wide garages are often placed prominently at the front of the house, near the street (photo – bottom right). This is done for ease of access to the garage and to shorten the space and reduce the cost of building the driveway. Preservation of traditional neighborhood character stresses the need to set parking and garages back from the main front walls of buildings (photo at left). This helps to preserve the streetscape view and highlight the architectural character of the buildings without the visual intrusion of parked cars or garage doors. TND standards also stress the need to place driveways, parking and garages back from the primary front building line. Some TND regulations go a step further and specify that two or more garage stalls must be separated by individual doors rather than one wide door.

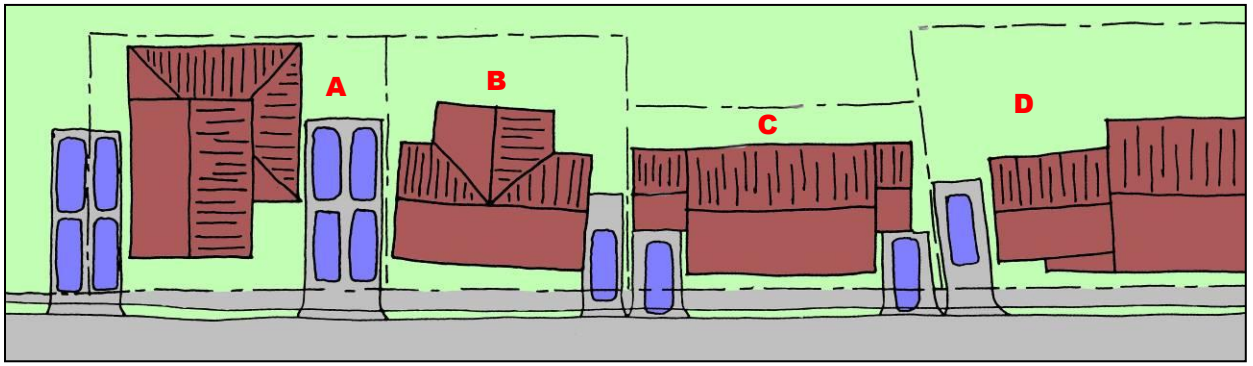


Figure 8 - This row of homes highlights how very dense lot development forces substandard parking arrangements. Lot A has double deep parking on both sides of the home, effectively eliminating all of the side yard green spaces. Lot B, with minimal space and limited side yard setbacks, only provides one parking space that consumes the only side yard space available, forcing the car to partially block the sidewalk. Similar to Lot B, Lot C uses both front lot corners to create parking spaces that block the sidewalk. Lot D is similar to the other lots but preserves some yard area to the rear of the home. The collective impact of these four lots is to force parking into the front yard and sidewalk, taking an otherwise attractive streetscape and making it appear much tighter due to the dominance of parked cars in the front yards.

Garage doors are divided but dominate the front view of this building

Single and double wide garage doors overpower this repetitious facade

A better design - home with garage doors facing away from street

As discussed above, many of Concord's older neighborhoods were developed before automobiles existed. Homes were placed fairly close together and close to the street, leaving fairly narrow spacing between buildings. When automobiles became widespread, driveways were later installed in the spaces between buildings. Over the past fifty years, automobiles have proliferated. Where most families had one car in the 1950's, two, three and four car families are now quite common, further eroding the open space balance on higher density properties. The predominant driveway configuration in the study blocks is a single car width driveway leading to parking or a garage in the side or rear yard. Where garages are present they are generally located in the rear yard. Attached garages are most often located to the rear of the main residence, often in a converted barn or carriage shed. Several other parking arrangements were also found, including head-in parking spaces directly off the public street.

- Parking in the front yard eliminates important public & semi-public open space and degrades the visual quality of the street.
- Multi-width parking in the public and semi-public space also removes important public landscape areas and damages the streetscape building rhythm.
- Single width driveways in side yards without a garage works well for a single family home provided that it is deep enough to accommodate the multiple car needs of the family.
- Short driveways in the front yard on both sides of a duplex places too much asphalt in the public space and degrades the landscaping elements of the streetscape.
- A shared driveway along a common lot line reduces the amount of asphalt and allows for larger side yards on the opposite side of the house.

To preserve the urban character of Concord's residential streets, both old and new, parking and garages should be set back from the front plane or wall line of buildings. Double-wide or larger driveways that interrupt the rhythm of streetscape should also be discouraged or prohibited.

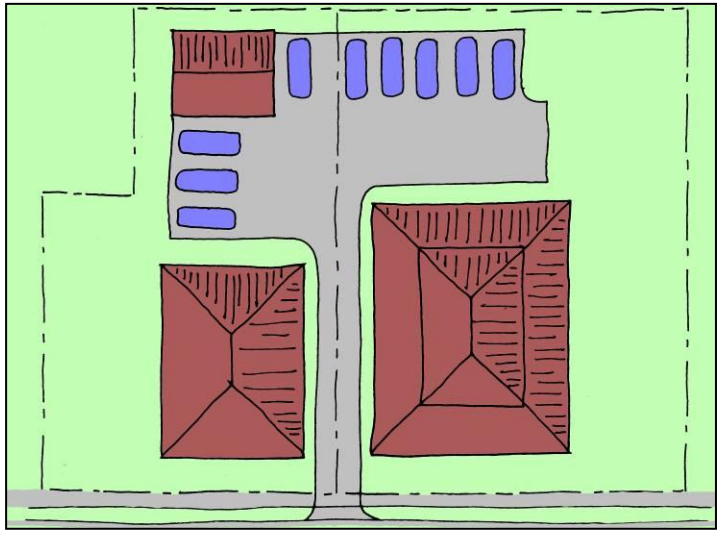


Figure 9 - A single width driveway shared by adjacent lots with parking in the rear yard - minimizing the impact on the streetscape.

Summary:

- **Two parking spaces per dwelling unit are necessary in higher density traditional neighborhoods settings.**
- **The City should continue to disallow parking in front yard setbacks.**
- **Attached garages and parking should be required to be set back at least 10 feet from the front plane or face of the primary building or located in the back yard when space permits.**
- **Detached garages should be located in the rear yard of the primary structure.**
- **Zoning regulations should be revised to permit 2-deep parking for each dwelling unit to minimize impervious coverage on residential lots.**
- **For garages that are wider than one car width, multiple single-wide garage doors should be encouraged and double-wide doors discouraged.**
- **Similarly, single car width driveways should be encouraged and double widths discouraged.**
- **Shared single width driveways along common lot lines should be encouraged to lessen the number of driveways entering onto a street and reduce the amount of asphalt visible in the streetscape.**

3.2 Building Design

Architectural style: One of the features that makes Concord so attractive is the rich architectural character of its older neighborhoods. As with most of Concord's older neighborhoods, the ten blocks investigated for this study were built between the nineteenth and early-twentieth centuries. Different architectural styles were dominant in different decades during this roughly 100 year period. In order to build on the quality of Concord's exiting neighborhoods it is important to understand some of the physical attributes that these different architectural styles bring to the residential neighborhood form. Following are representative examples of the dominant building styles in the city's existing neighborhoods along with their key architectural style elements.

Colonial/Georgian Style (mid-1700's to early-1800's)

Style Elements

- Simple, unadorned box appearance with minimal architectural detailing
- Small, multiple window panes
- Vertical window orientation
- Windows are aligned both vertically and horizontally
- Large central chimney
- Short roof overhang
- Symmetrical or asymmetrical façade layout with few elements projecting from the four main walls. Front porches were usually later additions.
- Simple, side-gabled roof without dormers and a 30-45 degree roof pitch.
- Horizontal clapboards are the dominant wall covering. A small percentage of homes from this period were built of brick.

Greek Revival Period (1820-1860)

Style Elements

- Heavy blocked effect emphasizing the corners and roof to mimic a Greek temple.
- Larger, vertically oriented windows with small, multiple window panes and a strong lintel (cap over the top of the window)
- Symmetrical façade layout
- Wide cornice and roof overhang
- Gable end of house usually facing the street with door off-center
- Porches are either supported by classic round columns or inset into corner of main house box with wide vertical trim boards
- Front door is usually framed with side or transom windows
- Moderate roof pitch – often about 30 degrees
- Smaller, less conspicuous chimneys

Gothic Revival (1840-1880)

Style Elements

- Steeply pitched roofs often with dormers and/or cross gables
- Ornate vergeboards (trim) around the gable roof end
- Roofs originally covered in slate
- Large roof overhang
- Windows are tall and oriented vertically with one or two panes
- Front or side, one-story porches are almost always present, often with flattened gothic arches
- Frequent use of pointed gable windows

- Fancy scrolled trim on porches, windows, eaves and gables
- Lack of trim detailing beneath roof eaves
- Wall surfaces extend into gables without interruption
- More elaborate chimneys
- Both wood and brick are used for wall materials, sometimes with vertical siding treatment such as board and batten
- Almost always two or three stories in height

Italianate (1840-1885)

Style Elements

- High style designs are intended to follow the style of an Italian villa (see example at right) with a taller tower element and asymmetrical design
- Common varieties have steep pitched roofs with gable end to the street (see examples below)
- Large scale, two and three story design
- Tall vertical window orientation with one or two glass panes
- Some windows are arched or rounded at the top
- Paired and triple windows are common
- Extensive use of brackets at roof eaves and porches
- Heavy trim at cornerboards, windows, doors and cornice
- Large roof overhang
- Bay windows are quite common
- Raised porches are always found in this style either supported by columns or ornate brackets
- Large front doors are either paired or single, usually with a large window

Mansard (1860-1890)

Style Elements

- This style is characterized by the dominant roof feature
- Ornately detailed dormer windows project from steep pitched roof covering most of top floor of building
- Ornamental brackets support large roof overhang
- Porches are found on nearly all examples
- Bay windows are typical
- Door, window and porch details are shared with Italianate style

Stick Style (1860-1890)

Style Elements

- Steeply pitched gable roof adorned with stickwork in gables and in porches and balconies
- Large roof overhang supported by exposed rafter ends
- Wood wall coverings often interrupted by patterns of vertical, horizontal and diagonal trim work raised from the wall plane
- Column supported porches are nearly universal and usually have diagonal or curved bracket ornamentation
- Tall, vertically oriented windows often found in pairs
- Bay windows have squared off side walls as compared to the angled side walls common in other Victorian styles

Queen Anne (1875-1910)

Style Elements

- Steeply pitched hipped roof with complex and irregular gable layouts turrets or towers
- Dominant front gable, often with front porch beneath to accent an asymmetrical facade
- Large roof overhang with exposed rafter ends
- A variety of wall materials are used with most surfaces covered in clapboards with textured shingle accents in eaves and in banding between floors to avoid plain wall surfaces
- Tall, decorative, rectangular chimneys
- Tall, vertical windows are typical, with a wide variety of geometrically patterned accent windows
- Small, ornate detail work is found around gables, windows and porches

Shingle Style (1880-1920)

Style Elements

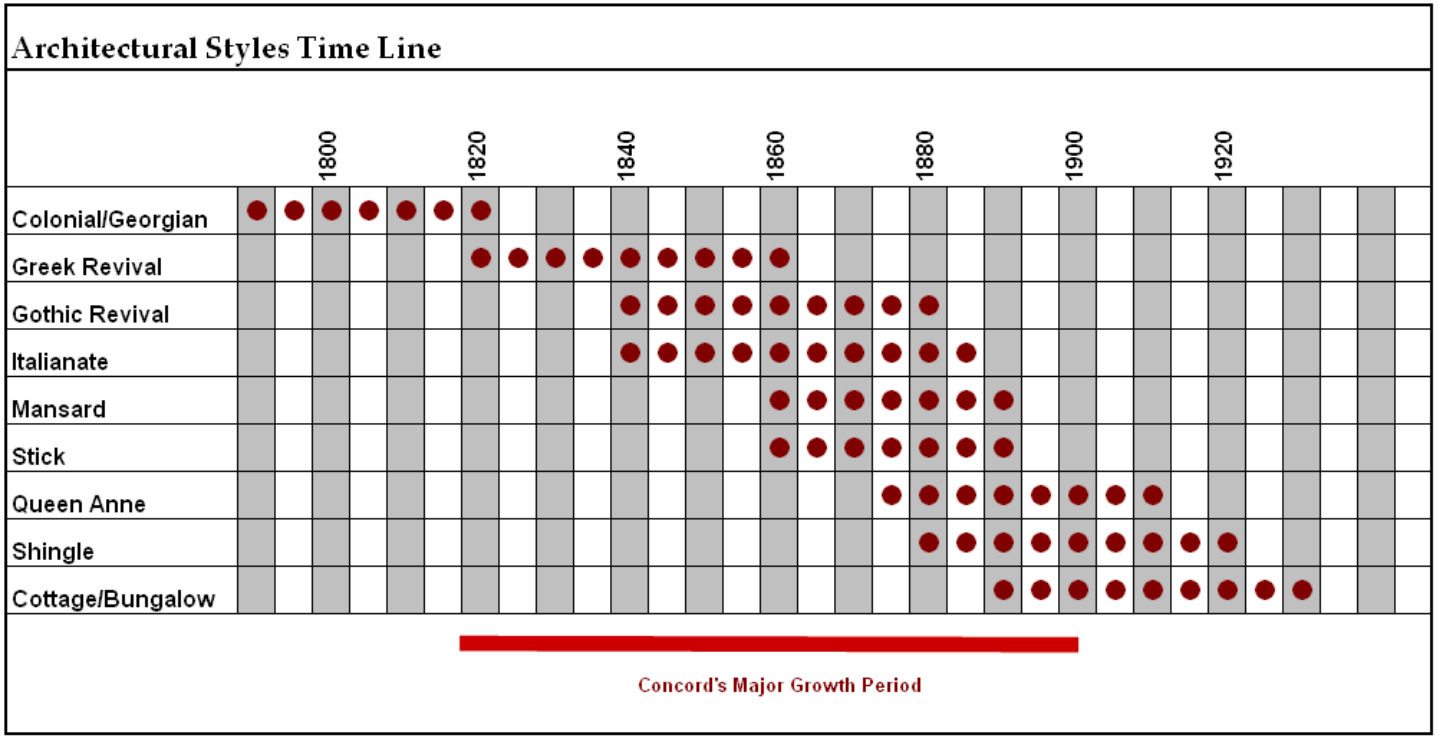
- Wall coverings are almost exclusively wood shingles
- Original roof materials were also wood shingles, although most have been replaced with contemporary asphalt shingles
- Main façade us usually asymmetrical
- Roofs are an irregular configuration with cross gables and multi-level eave lines
- Front and/or side porches are typical
- Gambrel roofs are not uncommon

Cottage/Bungalow (1890-1930)

Style Elements

- A one or two story box shape with a hipped roof
- One or more dormers are symmetrically located on each roof face
- Full or partial length porches are standard
- Plain, wide corner boards and eaves are found where clapboard siding is used. Wood shingles are also very common in this style
- Brackets and other ornate details found in Victorian era homes are absent

Concord saw many of its in-town neighborhoods developed during the 1800's, a century that was dominated by a variety of the Victorian styles detailed in the preceding descriptions. This era covered a continual evolution of stylistic features, many of which were often combined in individual buildings. While many of the photographic examples presented here, and a significant percentage of the homes form this era in Concord and Penacook, have a number of details that make them unique, they also share important common elements. Details in ornamentation changed with the architectural style in vogue when an individual building was constructed but the basic shapes and placement on lots were surprisingly consistent. The dominance of two and a half story, gable ended homes in Concord is evident when one realizes that Greek Revival, Gothic Revival, Italianate and some Stick style homes present a similar silhouette to the streetscape. It is this consistency of shape and the diversity of detail from one building to the next that sets a strong streetscape pattern for much of the city.



ROOFS

Homes in Concord are dominated by a regular gable roof style with a fairly steep pitch to readily shed snow. Hip and mansard roofs are variations on the gable theme and have some presence in the city's neighborhoods, particularly with homes built around 1900. Due to the relatively narrow time period during which Concord's older neighborhoods were developed, nearly all roofs have a significant overhang at the eaves ranging from 10-16 inches.

Gable End
to street

Gabel End
away from street

Mansard

Hip

Gambrel

Roof pitch and orientation to street

Early Concord architectural styles recognized New England winters and settled on roof slopes that ranged from about 30 to 45 degrees in order to readily shed snow and rain. In order to fit more homes on a block, the narrower dimension of rectangular homes usually faced the street resulting in a dominance of gable ended homes. This pattern is interrupted periodically with wider lot frontages and the gable end being perpendicular to the street.

30 degree roof pitch

45 degree roof pitch

60 degree roof pitch

In addition to overall residential density and fairly narrow front yard setbacks, Concord's older neighborhoods are dominated by rectangular lots having their short dimension to the street. For all of the blocks studied in Concord, the lot dimensions averaged to 75 feet wide by 125 feet in depth. **Fifty-five percent** of the homes in the study blocks have the gable end or narrow side of the home facing the street, allowing for somewhat narrower lots in the 50-65 foot range. **Twenty percent** of the lots have the longer building dimension facing the street, necessitating wider lots which were often nearly double the width of lots with buildings oriented with their gable end to the street. The remaining lots in the study blocks are corner lots (25%) which were either rectangular in shape and similar in dimensions to the other lots in the block, or larger and more squared off - making it possible to construction more prominent structures.

WALLS

Scale and Proportion

Traditional neighborhoods in Concord are dominated by the architectural styles in vogue from the mid-1800's up to about 1920. The photographs shown in the Architectural Styles section can serve as stylistic examples of what makes Concord's existing neighborhoods work aesthetically. Residential building scale directly relates to the dimensions of the human body or about 6 feet. To be compatible with human scale most of the elements on a building face should either be within that dimension or

multiples of it. With a dominance of gable end homes facing the street, these buildings average 20-30 feet in width on their primary street face. Additional ells, window bays and porches on the sides of homes also add greater width and variety to a building. For homes that do not have their gable end facing the street, building widths average approximately 40-50 feet.

Window-to-wall proportions

Concord's building styles have front faces with regular window to wall spacing and are either symmetrical or asymmetrical in overall appearance. Establishing a rhythmic spacing between walls and windows adds to the tempo of the wall face and to the streetscape of the block.

Window configuration

From the photographic examples above it is evident that Concord's dominant architectural styles have vertical window proportions and vertical wall proportions. Late 19th century and early 20th century homes have windows that are usually about 3 feet wide by 5 feet high or a proportion of 3 to 5. Where smaller windows have been installed they tend to hold a similar width-to-height ratio. Some architectural styles also included bay windows to provide an additional element of depth to the front or side façade of the building.

Building Height

Dominant building heights in older downtown Concord neighborhoods are 1½ to 2½ stories and primarily relate to the time period when the homes were constructed. In the study blocks reviewed for this project 63% of the structures are 2 or 2½ stories in height. Only 35% are 1 ½ stories tall. Of the 174 properties included in the study blocks, only three were one story and only one was a full three stories. A very small number of residences in the study blocks are newer, single story infill homes constructed in the later half of the 20th century in the Cape Cod or Ranch style.

Porches and bay windows – breaking up large flat walls

From the many photographic examples in this report it is evident that porches are a very significant architectural feature in the city's older neighborhoods also providing a practical weather covering over the front entrance. The dominant porch shape in Concord is a small stoop or entry hood that protects the front door landing. Later architectural styles had more elaborate porches that spanned the entire width of the building along the street frontage or wrapped around a front corner. Because so much of the architecture in Concord comes from the Victorian era, bay windows are also an important design element. Both porches and bay windows provide important design features that help transform flat, two dimensional building façades and give them depth and individuality. Porches add further physical depth by carving out an extension of semi-private space that is close enough to the public sidewalk to invite conversation between a resident and a passerby.

Building Materials

Due to its wide availability, wood clapboards were the material of choice during the dominant era of development for Concord's older neighborhoods. A few examples of granite block and brick can also be found but they are the exception rather than the rule.

Summary: The dominant architectural features of Concord's older neighborhoods are:

- **Two-thirds of the homes are two or two and a half stories tall. The remainder are one and a half stories.**
- **More than half have the gable end of the building (the narrower dimension of a rectangular building) facing the street which is typically 20-30 feet wide. Homes with the longer dimension facing the street, and the gable end away from the street, are 40-50 feet in width.**
- **Predominantly wood frame construction with horizontal clapboard siding. A small percentage have a brick exterior.**
- **Roof slopes are 30 to 45 degrees – mostly with substantial roof overhangs (± 1 foot).**
- **Nearly all building faces are interrupted by porches and many also have bay windows. Side walls may also have porches, bay windows or small ells to eliminate large blank wall surfaces.**
- **Windows are oriented vertically and have a width to height ratio of approximately 3 to 5**
- **Nearly endless variety of architectural style treatments that are sympathetic to the styles of the city's traditional neighborhoods.**

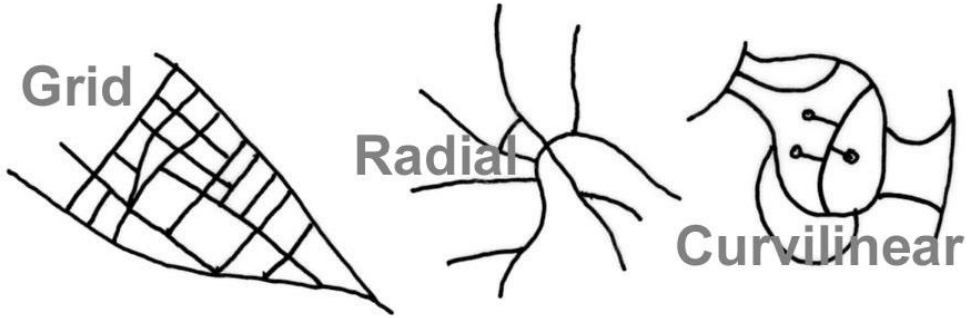
3.3 Building Placement and Streetscape

One of the hallmarks of traditional neighborhood development design that holds true for Concord's own neighborhoods is the human scale of the blocks and the interconnectedness of the streets. Rectangular block shapes with a classic grid or modified grid street pattern provide many options for travelers who live in or pass through the neighborhood. By defining the width of the roadway, sidewalks and average building setbacks the city can either establish an intimate street feel, a wide boulevard, or an arterial street.

3.3.1 Road Pattern: Street Scale, Street Width, Function & Connectivity, Sidewalks, Bike Lanes, Parking

The neighborhoods in downtown Penacook and Concord were largely developed in a grid street pattern with some organic road elements to accommodate early development patterns, property ownership and physical features. During the later third of the 20th century, curvilinear street patterns have gained more use. The City has maintained a policy of requiring street "stub" connections in new subdivisions to provide links to adjacent undeveloped property in an effort to ensure good street interconnectivity. In recent years there has been a growing accommodation to existing property abutters who generally oppose extensions of streets that are presently dead-ended. As a result, the finely interlaced street network found in older neighborhoods has not occurred as often in newer developments. This has resulted in an increasing number of permanently dead-end streets.

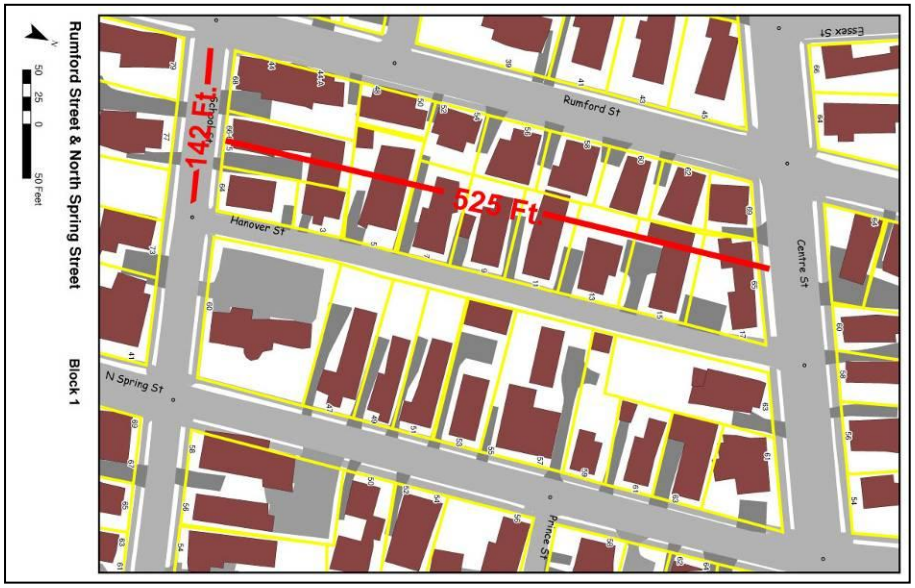
Consequences of limited street interconnectivity are that individual developments become isolated enclaves that require motorists, and pedestrians to travel onto main roads for virtually all trips. This practice contributes to traffic congestion on the impacted primary roads, greater reliance on the automobile and disincentives for people to walk or ride their bicycles. Contrast this with older grid street patterns where streets form a fully interwoven network that provides many travel choices, a greater dispersal of traffic and lower congestion on adjacent primary roads. A grid pattern offers numerous alternatives to travel into and through the neighborhood without overloading streets that are designated for strictly residential use. Greater interconnectivity also promotes more pedestrian and bicycle use (if bike lanes and sidewalks are provided) by creating shorter, more direct, travel pathways and a variety of travel route alternatives.



3.3.2 Block Scale

Concord's well-established neighborhoods are dominated by blocks that are generally rectangular in shape with depths of 200-300 feet. The block depth is determined by the average lot depths in the block (twice the lot depth=block depth). Block lengths have a much larger variation, likely formed by the original shape of the property when it was subdivided into house lots more than a century ago. Concord's older neighborhood block lengths average in the range of 400-600 feet.

Looking more closely at the study blocks, the very dense Centre/N. Spring/School/Rumford Block (study block #1) has an average depth of only 142 feet and length of 525 feet. The narrow depth severely restricts the amount of private space available to the residents since their lot depths, and back yards are fairly short. Conversely, study block #6 (Carter/Bow/Stone/Broadway) has a reasonable 230 foot block depth but the length is more than 1,000 feet, creating a very long, straightaway with no cross streets to shorten walking distances or slow down through traffic.



3.3.3 Street Scale

Early land developers and town officials recognized the value of varying street and right of way widths when they laid out Concord's streets. While most older city streets have pavement widths of 25-40 feet, planned arterial streets, such as Washington, Centre, and Broadway, are much wider. Current new town and TND designs have recognized that street pavement and building-to-building widths are critical in shaping the feel of the block and the likely nature of the vehicular traffic that will use it. Current TND design principles encourage a direct link between the type and density of the neighborhood and the street cross section design.

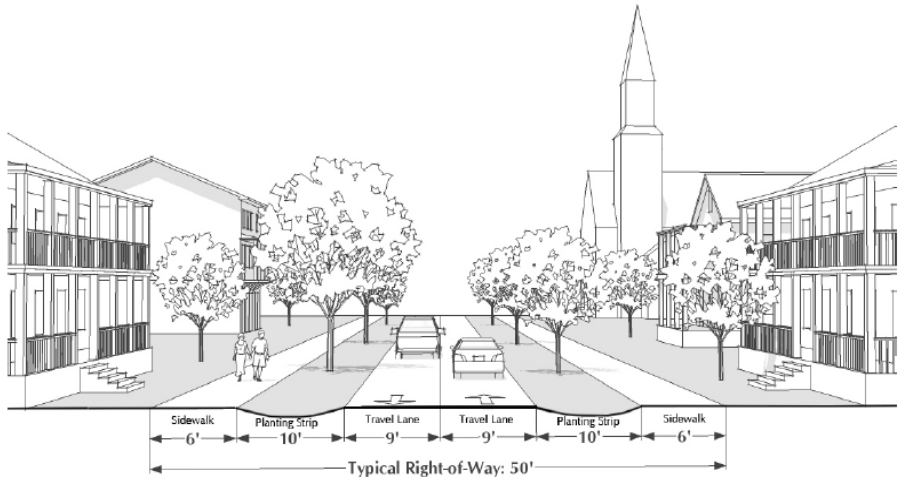
In the past few years, the City of Concord has been exploring several street cross-section designs that relate to the character of the adjacent land uses and anticipated traffic volumes. Rural local and arterial roads should be designed differently from urban local and arterial streets. The City's current street design standards promote 30 foot pavement widths in medium and higher density development.

Following are some visual examples of differing urban street design standards from Sarasota, Florida's draft TND regulations[2].

Just as street widths need to relate to the nature and intensity of adjacent land uses, so does the building setback line and the overall dimension from a building on one side of a street to the face of the building on the opposite side (the building-to-building dimension as we refer to it). From an urban design perspective, building-to-building widths are important in defining the character of the neighborhood and the sense of enclosure. The ratio of building-to-building width to the average height of the adjacent building walls (or **street cross section ratio**) significantly influences the urban, suburban or rural character of the street.

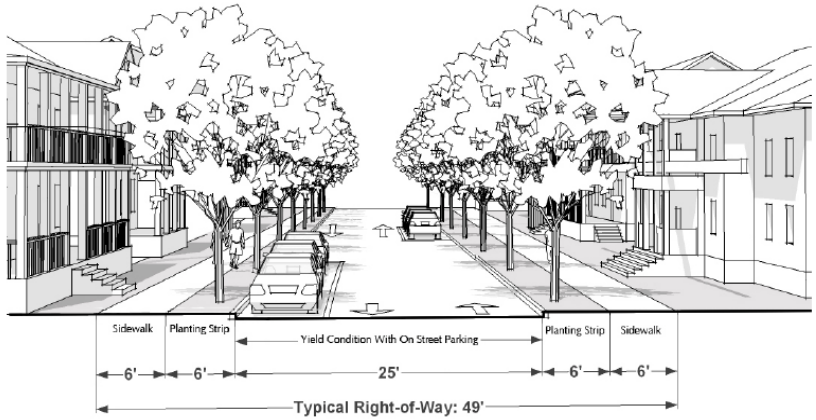
Road:

Core	
General	
Edge	●
Preserve	



Street F:

Core	
General	●
Edge	●
Preserve	



[2] Sarasota County, Florida. 4/5/07 Draft District Development Review Standards, sec. 6.11.5.i (page 29)

Table 1 lists the "Street Building to Building width" for the blocks studied in preparing this report. The building-to-building dimensions in the study blocks range from a low of 54 feet to a high of 84 feet with an average of 71. With most of the homes in the study blocks being two- to two and half stories (25-30 feet) the street cross section ratio ranges from 2.4:1 to 2.8:1. The study block analysis revealed that the average front setback is 10 feet. A ten foot front setback with a 50 foot wide right of way results in a 70 foot wall-to-wall width.

Street Cross Section Ratios

Wall-to-wall Width (Feet)	Front Setback (Feet)	Average Building Height (Feet)				
		15	20	25	30	35
50	0	**3.3 : 1**	**2.5 : 1**	**2.0 : 1**	**1.7 : 1**	**1.4 : 1**
55	2.5	**3.7 : 1**	**2.8 : 1**	**2.2 : 1**	**1.8 : 1**	**1.6 : 1**
60	5	**4.0 : 1**	**3.0 : 1**	**2.4 : 1**	**2.0 : 1**	**1.7 : 1**
70	10	**4.7 : 1**	**3.5 : 1**	**2.8 : 1**	**2.3 : 1**	**2.0 : 1**
80	15	**5.3 : 1**	**4.0 : 1**	**3.2 : 1**	**2.7 : 1**	**2.3 : 1**
90	20	**6.0 : 1**	**4.5 : 1**	**3.6 : 1**	**3.0 : 1**	**2.6 : 1**
100	25	**6.7 : 1**	**5.0 : 1**	**4.0 : 1**	**3.3 : 1**	**2.9 : 1**

From the above illustrations, it is easy to see how the street cross section ratio dramatically influences the feel of the street. For urban residential neighborhoods like those studied in Concord, a 10 to 15 foot front yard setbacks to the primary building wall is desirable. Porches and bay windows should be allowed to project into this setback to add depth and variety to the buildings and streetscape.

3.3.4 Streetscape Tempo

Just as individual buildings have a tempo or pattern of window openings to wall openings, entire blocks have patterns of building faces to the spaces between. The tempo of a block or streetscape is determined by the rhythm of building wall faces and the gaps between them. A very clear streetscape pattern has been established with the majority of the study block buildings having gable end to the street orientation. This pattern is reinforced by fairly consistent side yard and front yard setback dimensions as can be seen in the accompanying illustration. While front and side yard setbacks remain consistent, the occasional home with the gable end facing away from the street and the homes on corner lots introduces some variety to keep blocks from being overly regimented and monotonous. In the denser study blocks, the building façade widths are equal to or greater than the spacing between buildings. In the lower density study blocks the spacing between buildings tends to exceed the width of the building. For the purposes of this study, buildings should generally be placed 10-15 feet from the side lot line in most cases and no further than the width of the front building face in limited circumstances to replicate the density and streetscape tempo that characterizes Concord's older neighborhoods.

An example of good setbacks, lot spacing and street tempo

3.3.5 Corner lots

Corner lots comprise one-quarter of all the lots examined for this project. From an urban design perspective, corner lots offer special opportunities to make more significant architectural and landscape statements, providing more color and character to the neighborhood. In Concord's study blocks there are two basic corner lot treatments (a) homes that follow the tempo and architectural clues from the remainder of the block, and (b) homes that are larger or of a more elaborate architectural style. Corner lots have the added challenge of having two building faces open to public view and a larger proportion of semi-public space generally. Driveways, parking and garages also present a greater challenge if their treatment is to be done well. Placing a larger, possibly multi-tenant building on a corner lot could offer the potential for a more substantial architectural statement, both in terms of the building mass and style.

Summary: Building placement and streetscape characteristics of Concord's older neighborhoods are:

- **Finely knit, interconnected grid street pattern with sidewalks and landscaped strips between the curb and sidewalk.**
- **Rectangular block shapes should range in size from 200-300 feet in depth to 400-600 feet in width.**
- **Street rights-of-way should be 50 feet in width for most local residential streets. Collector and arterial streets, with wider pavement widths, should respect the street cross section ratios recommended in this report.**
- **Buildings should be placed between 10 and 15 feet from the front lot line with porches, bay windows and other architectural appurtenances allowed to be as close as 5 feet to the front lot line. Some variation in building setbacks should be required between adjacent buildings.**
- Buildings should generally be located no closer than 10-15 feet from the side lot lines but no further than the width of the face of the building.
- Corner lots should be larger in size and have more substantial buildings with higher design styling.

3.3.6 Landscaping

The public spaces within the street building-to-building width are very harsh and uninviting without building foundation plantings, front yard landscaping or street trees. Mature street trees also help enclose the public space with a branch canopy and add a third dimension to the street right-of-way space. The City of Concord currently has street tree planting requirements for

new subdivisions and multi-family developments but continued emphasis needs to be placed on providing ample street trees in new developments to foster the growth of street tree canopies.

New subdivision with young tree growth

Older neighborhood street with mature tree canopy

3.3.7 Public Open Space

If Concord creates higher density zoning provisions inside the urban growth boundary, on the order of 8-10 dwelling units per acre, careful consideration needs to given to providing neighborhood and community open spaces. These can take the form of neighborhood playgrounds, mini-parks and even landscaped focal-points or street intersections. In Concord's older neighborhoods there are a number of fine examples of urban open spaces including White Park, Fletcher-Murphy Park, street intersection landscaping at Washington & Centre Street, and Carter-Bow-South Street. The new 2008 City Master Plan has established urban park development standards of 5 acres per 1000 people for city-wide parks and 10 acres per 1000 people for neighborhood parks. In higher density neighborhoods, such as those being suggested in this report, mini-parks and playlots are also recommended. If the City implements a TND approach, as suggested in this report, consideration needs to be given to requiring public recreation space in larger developments.

Summary: The City needs to continue to require tree plantings in the front yards of new homes and street trees along the landscape strip between the sidewalk and the street curb. Along with the higher densities and small lot sizes recommended in this report comes a need to provide community open space in the form of neighborhood playlots, parks, and landscaped focal points to enhance the livability of denser neighborhoods.

4.0 Summary and Recommendations to Reinforce Concord's Traditional Neighborhood Character

The study block information presented in this report, combined with a review of new TND standards across the country provides an excellent basis for developing density bonus standards that can be applied inside the Urban Growth Boundary. Following is a summary of the findings from this report that collectively can allow new developments to have similar character, feel and density of the city's traditional neighborhoods.

1. Residential Density

Gross residential densities of approximately eight dwelling units per acre are typical for Concord's older neighborhoods. Net residential densities average 10 dwelling units per acre or 4,100 square feet of lot area per dwelling unit.

2. Minimum Lot Size

Lot sizes have considerable variability in the study blocks but the minimum lot size necessary to accommodate a single family home with parking and reasonable building setbacks needs to be at least 5,000 square feet in area.

3. Residential Land Use Mix

Concord's older neighborhood are noted for their residential land use mix. A diversity of dwelling unit types should include about 31% single family, 34% duplex, 12% 3-DU, 9% 4-DU, 8% 5-DU and about 6% 6-DU structures.

4. Lot Coverage & Open Space

To ensure that the landscaping and visual quality of Concord's existing neighborhoods is maintained in newer developments, a minimum of 2,000 square feet of open space per dwelling unit should be provided on each residential lot.

5. Public & Private Space

Properties in higher density residential neighborhoods need to include spaces that are part of the public's visual space as well as private spaces for the benefit of the property resident.

6. Parking & Driveways

- **Two parking spaces per dwelling unit are necessary in higher density traditional neighborhoods settings.**
- **The City should continue to disallow parking in front yard setbacks.**

- **Attached garages and parking should be required to be set back at least 10 feet from the front plane or face of the primary building or located in the back yard when space permits.**
- **Detached garages should be located in the rear yard of the primary structure.**
- **Zoning regulations should be revised to permit 2-deep parking for each dwelling unit to minimize impervious coverage on residential lots.**
- **For garages that are wider than one car width, multiple single-wide garage doors should be encouraged and double-wide doors discouraged.**
- **Similarly, single car width driveways should be encouraged and double widths discouraged.**
- **Shared single width driveways along common lot lines should be encouraged to lessen the number of driveways entering onto a street, reducing the amount of asphalt visible in the streetscape.**

7. Building Design

The dominant architectural features of Concord's older neighborhoods are:

- **Two-thirds of the homes are two or two and a half stories tall. The remainder are one and a half stories.**
- **More than half have the gable end of the building (the narrower dimension of a rectangular building) facing the street which is typically 20-30 feet wide. Homes with the longer dimension facing the street are 40-50 feet in width.**
- **Predominantly wood frame construction with horizontal clapboard siding. A small percentage have brick exteriors.**
- **Roof slopes are 30 to 45 degrees – predominantly with substantial roof overhangs (± 1 foot).**
- **Nearly all building faces are interrupted by porches and some with bay windows. Side walls may also have porches, bay windows or small ells to eliminate large blank wall surfaces.**
- **Windows are oriented vertically and have a width to height ratio of approximately 3 to 5.**
- **Nearly endless variety of architectural style treatments that are sympathetic to the styles of the city's traditional neighborhoods.**

8. Building Placement & Streetscape

Building placement and streetscape characteristics of Concord's older neighborhoods are:

- **Finely knit, interconnected grid street pattern with sidewalks and landscaped strips between the curb and sidewalk.**
- **Rectangular block shapes should range in size from 200-300 feet in depth by 400-600 feet in width.**
- **Street rights-of-way should be 50 feet in width for most local residential streets. Collector and arterial streets, with wider pavement widths, should respect the street cross section ratios recommended in this report.**

- **Buildings should be placed between 10 and 15 feet from the front lot line with porches, bay windows and other architectural appurtenances allowed to be as close as 5 feet to the front lot line. Some variation in building setbacks should be required between adjacent buildings.**
- **Buildings should generally be located no closer than 10-15 feet from the side lot lines but no further than the width of the face of the building.**
- **Corner lots should be larger in size and have more substantial buildings with higher design styling.**

9. Public Landscaping and Open Space
The City needs to continue to require tree plantings in the front yards of new homes and street trees along the landscape strip between the sidewalk and the street curb. Along with the higher densities and small lot sizes recommended in this report comes a need to provide community open space in the form of neighborhood playlots, parks, and landscaped focal points to enhance the livability of denser neighborhoods.

4.1 How do These Standards Work in the Real World?

Four recently approved site plans and subdivisions were evaluated to determine how they might have been developed if the standards recommended in this report were utilized. Utilizing the approved site plan layout and determinations on buildable acreage, the standards summarized above were applied to each development project to see what impacts and tradeoffs would occur. The four projects are:

- Abbott Village: An 80 unit townhouse condominium, currently under construction on the east side of North State Street, across the street from Swenson Granite and Corriveau Routhier Masonry Supply. The project has about ten acres of buildable land and a significant amount of non-buildable land down a steep bluff to the east of the useable portion of the site
- Goldenrod and Heather Lane subdivisions: Two subdivisions totaling eleven single family house lots on 6.4 buildable acres of land off South Street. Several of the house lots have yet to be sold or built on.
- Oxbow Bluff: A 63 unit single family condominium development on Manor Road that has approximately 22 acres of useable land and a significant amount of land to the north of the main development area that is being protected as open space.
- Sandwood Crossing: This 102 lot single family subdivision has approved in 2000 and has continued to see new homes and occupancies occur over the last several years. There are almost forty acres of buildable land on this parcel that lies west of Thirty Pines off Borough Road.

Site Analysis Process

1. Each approved plan was evaluated to determine whether the basic road layout was conducive to the TND development standards developed in this report.
2. Lot depths needed to be approximately 110-120 feet.
3. Street layouts should conform to the stated block dimensional goals of about 200-300 feet deep by 400-600 feet long.
4. Based on the buildable/useable acreage, a maximum dwelling unit density was calculated using the 8 units per acre (gross) developed in this report.
5. Residential unit mix "target" numbers were then developed to establish the approximate number of one to six unit lots that would be needed to meet the dwelling unit distribution proposed in this study.
6. A test site layout was then developed to see if the density and unit mix could actually be accommodated. The layout took into account the recommendations of this report including the location of the larger unit structures at more prominent locations, a minimum of 4,100 square feet of lot area per dwelling unit, and a minimum of 2,000 square feet of open space per dwelling unit.
7. Because the TND recommendations are intended to result in new developments that are totally harmonious with the city's older neighborhoods, no project setback buffers were included in the site analysis and design. This recommendation is based on the overall objective of creating compact neighborhood layouts with modest amounts of open space on each building lot and larger public open spaces (and parks) near to the neighborhood. It should be noted that none of Concord's older neighborhoods have buffer separations from one block to the next, except where natural features create them.
8. Since none of the site layouts could accommodate the theoretical density and unit mix exactly, the test layout was then modified to get as close a "fit" to the ideal percentage mix of unit types as possible.

Site Analysis Results

The following table summarizes the four projects as approved and with the test site layout density analysis.

Comparative Site Plan Analysis

Current Zoning vs. Standards Recommended in this Report

	CURRENT ZONING			STANDARDS Recommended in this Report										Development Density Change		Maximum vs Calculated Density
Development	Buildable Acreage	Approved Lots or Units	Average SqFt/DU	Max.Density at 8 DU/A	Number of Lots	Number of DU	Average SqFt/DU	DU Mix 1 Family	2 F	3F	4F	5F	6F	Percent	Number	
Abbott Village	10.4	80	5,663	83	31	62	7,307	14	20	9	8	5	6	78%	-18	75%
DU Percent of Total Units								23%	32%	15%	13%	8%	10%			
Goldenrod & Heather Lanes	6.4	11	25,344	51	20	34	8,200	11	12	3	8			309%	23	66%
DU Percent of Total Units								32%	35%	9%	24%	0%	0%			
Oxbow Bluff	22.0	63	15,211	176	69	120	7,986	39	38	15	12	10	6	190%	57	68%
DU Percent of Total Units								33%	32%	13%	10%	8%	5%			
Sandwood Crossing	39.7	102	16,954	318	142	253	6,835	74	90	33	24	20	12	248%	151	80%
DU Percent of Total Units								29%	36%	13%	9%	8%	5%			

Site Analysis Findings

Building Configuration: Three of the development sites were able to accommodate double to triple the number of dwelling units actually approved by the City for the sites. One project, Abbott Village, resulted in a net reduction in units. The Abbott Village example is an interesting case in that the approved density is already at the 8 units per acre recommended in this report. The tradeoffs with this site layout are the creation of a residential neighborhood that provides a diversity of housing types and architectural character versus the single design townhouse configuration that is now being built. It should be noted that Abbott Village is located in a RN zoning district which currently allows up to ten dwelling units per buildable acre. The Abbott Village project is symptomatic of many newer multi-family developments in the city that impose building styles and scale that is radically different from what exists in city's traditional neighborhoods. A photograph of one of the Abbott Village townhouses is shown on page 14 of this report. This is one of the factors that can lead to neighborhood resistance to new development projects.

The mixture of residential densities found in the city's traditional neighborhoods is a product of both design and land use evolution. Many one and two family homes were built in Concord as neighborhoods were developed. Over the past century, many larger homes have been divided up and made into 2-6 unit buildings while retaining their historic architectural scale and detail. The site analysis undertaken on the four development projects has clearly pointed up that a mixture of dwelling unit types

can produce significantly higher densities *and* improve the aesthetics of a new development if the architectural standards proposed in this report are adhered to. The key to achieving higher density in a traditional neighborhood configuration is to allow smaller lots, but more importantly, to permit 2-6 unit buildings in the ratios evaluated in this report.

Residential Density Bonuses: The 200-300% gain in unit density shown on three of the site layouts provides the City with considerable latitude in determining what mix of density and unit types is appropriate. The primary goal of this report was to determine what density levels might be acceptable in new developments if a density transfer structure was put into place to protect greater amounts of open space in the rural parts of the city. This study has shown that Concord residents already live in and accept 8-10 units per acre in the traditional neighborhoods. Offering developers additional density in exchange for either protecting rural open space or providing funding to the Conservation Commission for that purpose seems very realistic given the findings of this report.

Appendix

1. **Study Blocks: Existing Neighborhood Site Conditions and Density Analysis**
2. **Study Blocks: Base Maps**

Existing Neighborhood Site Conditions and Density Analysis
City of Concord, NH Compiled by: RCH

Field Invesitgation: 3/23/2007
Sheet 1

Block Bounded by Centre/N.Spring/School/Rumford

		Assessor Data				Observed Data		Map Derived Data					Calculated Data				Street								Gross	Net
Street	Number	Acreage	#D.U.	Building First Floor Sq. Ft.	Total Living Area Sq.Ft.	#DU	#Parking	Setbacks Front	Left	Right	Rear	Outbuilding Area	Lot Area	Bldg Footprint	Parking Area	Avg Lot Width	Bldg-Bldg Width	Net Lot Open Spac	Percent Open Spac	Percent mperv.Cove	Bldg SF per DU	Lot Area Per DU	Parking Per DU	Net DU/A	DU/A w/ Street ROW	Open Space per DU
Centre	61	0.12	2	1913	2688	2	4	7	35	2	0		5227	1913	625	85	75	2689	51%	49%	1344	2614	2.00	16.67	10.85	1345
	63	0.21	1	1252	2200	1	2	3	15	10	75		9148	1252	420	60	75	7476	82%	18%	2200	9148	2.00	4.76	3.91	7476
	69	0.05	1	981	1339	1	2	2	12	5	2		2178	981	400	53	80	797	37%	63%	1339	2178	2.00	20.00	11.09	797
Hanover	3	0.04	1	564	1128	1	1	7	5	5	0		1742	564	140	47	60	1038	60%	40%	1128	1742	1.00	25.00	18.70	1038
	5	0.14	3	1970	3926	3	5	18	12	7	12	300	6098	2270	750	50	78	3078	50%	50%	1309	2033	1.67	21.43	19.44	1026
	7	0.10	2	1384	2736	2	3	8	12	8	10		4356	1384	850	50	85	2122	49%	51%	1368	2178	1.50	20.00	17.49	1061
	9	0.10	2	1115	1991	2	3	8	17	9	12	240	4356	1355	360	51	37	2641	61%	39%	996	2178	1.50	20.00	17.45	1321
	11	0.10	2	1169	2392	2	3	10	14	10	12		4356	1169	720	52	45	2467	57%	43%	1196	2178	1.50	20.00	17.40	1234
	13	0.11	2	1026	2056	2	4	9	15	15	30		4792	1026	675	57	37	3091	65%	35%	1028	2396	2.00	18.18	15.83	1545
	15	0.12	3	1299	2440	3	6	8	27	10	0		5227	1299	1250	63	45	2678	51%	49%	813	1742	2.00	25.00	21.73	893
	17	0.11	4	1636	3095	4	5	6	40	6	0		4792	1636	1050	60	40	2106	44%	56%	774	1198	1.25	36.36	31.44	526
Rumford	48-50	0.06	2	1231	3073	2	2	0	3	0	7		2614	1231	240	67	65	1143	44%	56%	1537	1307	1.00	33.33	20.31	571
	52-54	0.06	2	872	1654	2	2	3	3	2	18		2614	872	320	50	73	1422	54%	46%	827	1307	1.00	33.33	22.55	711
	56	0.07	3	1373	2493	4	4	7	7	15	3		3049	1373	840	60	75	836	27%	73%	623	762	1.00	57.14	38.30	209
	58	0.07	2	1184	2246	2	3	3	9	16	8		3049	1184	330	57	70	1535	50%	50%	1123	1525	1.50	28.57	19.47	768
	60	0.07	2	1131	1862	2	2	5	12	17	2		3049	1131	300	51	73	1618	53%	47%	931	1525	1.00	28.57	20.15	809
	62	0.06	1	910	1498	1	1	3	4	12	5		2614	910	250	45	70	1454	56%	44%	1498	2614	1.00	16.67	11.65	1454
School	60	0.32	4	2164	4344	5	14	7	65	35	10		13939	2164	4750	130	60	7025	50%	50%	869	2788	2.80	15.63	12.67	1405
	64	0.06	1	897	1789	1	1	8	5	7	20		2614	897	200	42	65	1517	58%	42%	1789	2614	1.00	16.67	11.89	1517
	66-66.5	0.13	4	2194	4138	4	8	7	8	10	7		5663	2194	1600	52	65	1869	33%	67%	1035	1416	2.00	30.77	25.02	467
	68	0.16	6	2652	5261	6	8	5	1	22	14		6970	2652	1050	57	60	3268	47%	53%	877	1162	1.33	37.50	31.13	545
North Spring	47	0.14	1	1056	2068	1	4	6	8	2	35		6098	1056	1140	47	60	3902	64%	36%	2068	6098	4.00	7.14	5.99	3902
	49	0.11	1	848	1201	1	3	5	10	5	50		4792	848	800	38	60	3144	66%	34%	1201	4792	3.00	9.09	7.59	3144
	51	0.13	1	1469	1729	1	3	8	5	3	43		5663	1469	900	38	62	3294	58%	42%	1729	5663	3.00	7.69	6.59	3294
	53	0.13	3	1206	2274	3	6	7	12	8	70	880	5663	2086	1750	45	62	1827	32%	68%	758	1888	2.00	23.08	19.25	609
	55-57	0.24	2	1631	2749	2	4	8	12	14	67	1166	10454	2797	1510	78	62	6147	59%	41%	1375	5227	2.00	8.33	7.02	3074
	59	0.09	1	600	1200	1	3	5	5	10	92	270	3920	870	450	40	60	2600	66%	34%	1200	3920	3.00	11.11	8.85	2600
	61	0.09	1	1008	1488	1	3	8	15	7	13	240	3920	1248	600	47	60	2072	53%	47%	1488	3920	3.00	11.11	8.55	2072
	63	0.08	5	1914	2926	5	5	7	16	3	0		3485	1914	990	47	60	581	17%	83%	585	697	1.00	62.50	46.74	116
Total		3.27	65			67	114																			
Avg		0.11		1333	2413			6	14	9	21	516	4912	1439	871	56	63	2601	51%	49%	1207	2717	1.83	22.95	17.55	1570
Median		0.10		1206	2246			7	12	8	12	285	4356	1252	720	51	62	2122	53%	47%						1061
Min		0.04						0	1	0	0	240	1742	564	140	38	37	581	17%	18%						116
Max		0.32						18	65	35	92	1166	13939	2797	4750	130	85	7476	82%	83%						7476

Rumford/Centre/Hanover/School		**Total -Both Blocks**
Gross Area-Acres	2.44	4.85
Gross DU/A	18.44	13.81
Net Area- Acres	1.76	3.47
Net DU/A	25.57	19.31
Avg Parking/DU	1.40	1.70
N.Spring/School/Hanover/Centre		
Gross Area-Acres	2.41	
Gross DU/A	9.13	
Net Area- Acres	1.71	
Net DU/A	12.87	
Avg Parking/DU	2.32	

Existing Neighborhood Site Conditions and Density Analysis
City of Concord, NH Compiled by: RCH

Field Invesitgation: 3/23/2007
Sheet 2

Block Bounded by Warren/Holt/School/Pine

		Assessor Data				Observed Data		Map Derived Data					Calculated Data				Street								Gross	Net
								Setbacks				Outbuilding	Lot	Bldg	Parking	Avg Lot	Bldg-Bldg	Net Lot	Percent	Percent	Bldg SF	Lot Area	Parking	Net	DU/A w/	Open Space
Street	Number	Acreage	#D.U.	Building First Floor Sq. Ft.	Total Living Area Sq.Ft.	#DU	#Parking	Front	Left	Right	Rear	Area	Area	Footprint	Area	Width	Width	Open Space	Open Space	perv.Cove	per DU	Per DU	Per DU	DU/A	Street ROW	per DU
Warren	112	0.14	1	660	1188	1	4	18	0	32	45	324	6098	984	752	62	85	4362	72%	28%	1188	6098	4.00	7.14	5.70	4362
	114	0.19	1	1167	1461	1	2	20	5	20	75		8276	1167	470	67	85	6639	80%	20%	1461	8276	2.00	5.26	4.38	6639
	118	0.15	1	885	1690	1	2	20	12	12	12	264	6534	1149	220	80	80	5165	79%	21%	1690	6534	2.00	6.67	5.10	5165
Holt	2	0.12	1	932	1678	1	3	7	0	30	30	280	5227	1212	470	63	70	3545	68%	32%	1678	5227	3.00	8.33	6.40	3545
	4-6	0.14	2	1600	3200	2	4	10	4	15	40		6098	1600	600	72	70	3898	64%	36%	1600	3049	2.00	14.29	11.03	1949
	10	0.15	1	1024	2036	1	3	12	5	40	38		6534	1024	480	75	78	5030	77%	23%	2036	6534	3.00	6.67	5.18	5030
	12	0.12	2	1161	2090	1	2	12	7	25	32		5227	1161	300	57	77	3766	72%	28%	2090	5227	2.00	8.33	6.55	3766
	14	0.18	1	1104	2116	1	3	2	5	42	30		7841	1104	500	82	70	6237	80%	20%	2116	7841	3.00	5.56	4.40	6237
	16	0.15	1	1121	2382	1	4	12	5	27	43		6534	1121	225	62	70	5188	79%	21%	2382	6534	4.00	6.67	5.39	5188
	18	0.10	2	1175	2171	2	4	10	0	12	7	600	4356	1775	960	47	65	1621	37%	63%	1086	2178	2.00	20.00	15.75	811
	20	0.14	1	1032	2174	1	3	18	20	0	7	750	6098	1782	300	57	75	4016	66%	34%	2174	6098	3.00	7.14	5.79	4016
School	105	0.12	2	2000	3844	2	2	5	12	22	5		5227	2000	240	72	70	2987	57%	43%	1922	2614	1.00	16.67	12.40	1494
	107-109	0.16	3	1918	2719	3	3	8	40	2	25	225	6970	2143	625	67	75	4202	60%	40%	906	2323	1.00	18.75	15.12	1401
Pine	13	0.07	1	725	1566	1	2	12	20	10	20		3049	725	340	52	75	1984	65%	35%	1566	3049	2.00	14.29	10.02	1984
	15	0.20	1	938	2052	1	2	10	30	0	65	400	8712	1338	1000	57	85	6374	73%	27%	2052	8712	2.00	5.00	4.30	6374
	17	0.20	1	1370	1790	1	2	15	37	7	55	180	8712	1550	450	68	78	6712	77%	23%	1790	8712	2.00	5.00	4.18	6712
	19	0.24	1	1235	2330	1	4	10	38	2	60	440	10454	1675	855	78	72	7924	76%	24%	2330	10454	4.00	4.17	3.51	7924
	21	0.15	1	1752	2642	1	3	12	20	8	18	1000	6534	2752	600	52	90	3182	49%	51%	2642	6534	3.00	6.67	5.56	3182
	23-23.5	0.19	2	1215	2380	2	2	15	5	28	70	900	8276	2115	1200	68	90	4961	60%	40%	1190	4138	1.00	10.53	8.73	2481
	25-25.5	0.06	2	1012	1968	2	4	15	0	3	17		2614	1012	680	40	87	922	35%	65%	984	1307	2.00	33.33	24.11	461
Total		2.97	28			27	58																			
Avg		0.15		1201	2174			12	13	17	35	488	6469	1469	563	64	77	4436	66%	34%	1744	5572	2.40	10.52	8.18	3936
Median		0.15		1141	2103			12	6	14	31	400	6534	1275	490	65	76	4282	70%	30%						3891
Min		0.06						2	0	0	5	180	2614	725	220	40	65	922	35%	20%						461
Max		0.24						20	40	42	75	1000	10454	2752	1200	82	90	7924	80%	65%						7924

Gross Area-Acres	4.01
Gross DU/A	6.73
Net Area- Acres	3.03
Net DU/A	8.91
Avg Parking/DU	2.15

Existing Neighborhood Site Conditions and Density Analysis
City of Concord, NH Compiled by: RCH

Field Invesitgation: 3/23/2007
Sheet 3

Block Bounded by Warren/Merrimack/Pleasant/Rumford

		Assessor Data				Observed Data		Map Derived Data					Calculated Data				Street								Gross	Net
Street	Number	Acreage	#D.U.	Building First Floor Sq. Ft.	Total Living Area Sq.Ft.	#DU	#Parking	Setbacks Front	Left	Right	Rear	Outbuilding Area	Lot Area	Bldg Footprint	Parking Area	Avg Lot Width	Bldg-Bldg Width	Net Lot Open Spac	Percent Open Space	Percent nperv.Cove	Bldg SF per DU	Lot Area Per DU	Parking Per DU	Net DU/A	DU/A w/ Street ROW	Net Open Space per DU
Warren	69	0.22	3	1616	3326	3	5	10	25	12	55	540	9583	2156	2650	70	60	4777	50%	50%	1109	3194	1.67	13.64	11.53	1592
	71	0.13	2	1628	2397	2	6	10	16	7	14		5663	1628	405	60	60	3630	64%	36%	1199	2831	3.00	15.38	12.16	1815
Merrimack	4	0.10	3	1199	2698	4	6	0	2	25	20	300	4356	1499	1000	66	67	1857	43%	57%	675	1089	1.50	40.00	29.01	464
	6	0.22	1	1296	2184	2	6	3	15	25	75	1260	9583	2556	2550	70	65	4477	47%	53%	1092	4792	3.00	9.09	7.69	2239
	8	0.22	3	1858	3663	3	6	5	15	25	60	800	9583	2658	1965	72	60	4960	52%	48%	1221	3194	2.00	13.64	11.48	1653
	12-14	0.41	6	3516	7743	6	6	10	7	60	45		17860	3516	2338	137	72	12006	67%	33%	1291	2977	1.00	14.63	12.28	2001
	16	0.25	1	1384	3469	1	4	10	55	12	70	672	10890	2056	2400	105	110	6434	59%	41%	3469	10890	4.00	4.00	3.22	6434
Pleasant	80	0.16	3	1914	4097	3	6	5	20	30	5		6970	1914	1400	90	80	3656	52%	48%	1366	2323	2.00	18.75	14.17	1219
	82	0.31	1	1297	2592	2	6	12	5	28	110		13504	1297	1200	93	95	11007	82%	18%	1296	6752	3.00	6.45	5.50	5503
	84	0.21	4	2063	4086	4	7	7	10	14	35	1000	9148	3063	2500	80	90	3585	39%	61%	1022	2287	1.75	19.05	15.63	896
	86-86.5	0.13	8	1831	5375	8	6	12	10	3	0	300	5663	2131	1260	65	90	2272	40%	60%	672	708	0.75	61.54	47.82	284
Rumford	3	0.07	2	980	1780	2	3	7	18	2	15		3049	980	750	43	60	1319	43%	57%	890	1525	1.50	28.57	21.12	660
	5	0.16	2	1438	2876	2	6	14	25	2	30	450	6970	1888	1275	64	70	3807	55%	45%	1438	3485	3.00	12.50	10.17	1903
	9	0.63	3	1585	3248	3	8	32	80	53	18	1050	27443	2635	3600	165	90	21208	77%	23%	1083	9148	2.67	4.76	4.14	7069
	13	0.22	2	1508	2934	2	6	13	25	5	60	500	9583	2008	2025	58	90	5550	58%	42%	1467	4792	3.00	9.09	7.90	2775
	15	0.36	1	1888	3638	1	3	30	32	10	70	616	15682	2504	1800	92	90	11378	73%	27%	3638	15682	3.00	2.78	2.42	11378
	17	0.43	2	1636	4261	2	4	30	58	12	57		18731	1636	670	120	90	16425	88%	12%	2131	9365	2.00	4.65	4.01	8212
Total		4.23	47			50	94																			
Avg		0.25		1685	3551			12	25	19	43	681	10839	2125	1752	85	79	6962	58%	42%	1474	5002	2.28	16.38	12.96	3300
Median		0.22		1616	3326			10	18	12	45	616	9583	2056	1800	72	80	4777	55%	45%						1903
Min		0.07						0	2	2	0	300	3049	980	405	43	60	1319	39%	12%						284
Max		0.63						32	80	60	110	1260	27443	3516	3600	165	110	21208	88%	61%						11378

Gross Area-Acres	5.55
Gross DU/A	9.19
Net Area- Acres	4.43
Net DU/A	11.51
Avg Parking/DU	1.88

Existing Neighborhood Site Conditions and Density Analysis
City of Concord, NH Compiled by: RCH

Field Invesitgation: 3/27/2007
Sheet 4

Block Bounded by Thorndike/Grove/Laurel/Pierce

		Assessor Data				Observed Data		Map Derived Data					Calculated Data				Street								Gross	Net
Street	Number	Acreage	#D.U.	Building First Floor Sq. Ft.	Total Living Area Sq.Ft.	#DU	#Parking	Setbacks Front	Left	Right	Rear	Outbuilding Area	Lot Area	Bldg Footprint	Parking Area	Avg Lot Width	Bldg-Bldg Width	Net Lot Open Spac	Percent Open Space	Percent perv.Cove	Bldg SF per DU	Lot Area Per DU	Parking Per DU	Net DU/A	DU/A w/ Street ROW	Open Space per DU
Thorndike	27	0.10	2	1322	2644	2	4	10	10	11	5		4356	1322	800	62	55	2234	51%	49%	1322	2178	2.00	20.00	15.83	1117
	29-31	0.16	2	1400	2039	2	4	11	11	10	20	500	6970	1900	950	62	60	4120	59%	41%	1020	3485	2.00	12.50	10.73	2060
	33-35	0.16	2	1400	2677	2	4	10	15	10	42		6970	1400	1400	65	50	4170	60%	40%	1339	3485	2.00	12.50	10.66	2085
	37	0.16	2	1428	2014	2	5	2	30	3	30	700	6970	2128	1200	65	50	3642	52%	48%	1007	3485	2.50	12.50	10.66	1821
	39	0.15	4	1436	2252	4	8	2	20	4	40		6534	1436	1200	65	50	3898	60%	40%	563	1634	2.00	26.67	22.52	975
	41-43	0.11	2	1248	1986	2	4	5	20	12	8		4792	1248	900	65	50	2644	55%	45%	993	2396	2.00	18.18	14.53	1322
	45-47	0.10	2	1356	2366	2	4	12	15	12	0		4356	1356	480	67	55	2520	58%	42%	1183	2178	2.00	20.00	15.57	1260
Grove	14	0.30	2	1452	2708	2	6	12	42	50	35	594	13068	2046	1320	120	65	9702	74%	26%	1354	6534	3.00	6.67	5.42	4851
Laurel	28	0.16	2	1200	1968	2	6	10	0	35	3	1026	6970	2226	900	65	55	3844	55%	45%	984	3485	3.00	12.50	10.83	1922
	30-32	0.16	2	1685	2443	2	6	10	14	18	35	516	6970	2201	1040	65	52	3729	53%	47%	1222	3485	3.00	12.50	10.83	1864
	34	0.16	1	1128	1800	1	4	10	0	40	7	600	6970	1728	1580	65	53	3662	53%	47%	1800	6970	4.00	6.25	5.42	3662
	36	0.16	1	864	1368	1	2	10	38	7	47	280	6970	1144	630	67	54	5196	75%	25%	1368	6970	2.00	6.25	5.39	5196
	40	0.16	2	1170	1535	2	6	11	0	32	37		6970	1170	725	70	54	5075	73%	27%	768	3485	3.00	12.50	10.72	2537
Pierce	1	0.10	1	816	1536	1	2	4	10	7	66	280	4356	1096	880	43	50	2380	55%	45%	1536	4356	2.00	10.00	8.35	2380
Total		2.14	27			27	65																			
Avg		0.15		1279	2095			9	16	18	27	562	6658	1600	1000	68	54	4058	59%	41%	1176	3866	2.46	13.50	11.25	2361
Median		0.16		1339	2027			10	15	12	33	555	6970	1418	925	65	54	3786	57%	43%						1991
Min		0.10						2	0	3	0	280	4356	1096	480	43	50	2234	51%	25%						975
Max		0.30						12	42	50	66	1026	13068	2226	1580	120	65	9702	75%	49%						5196

Gross Area-Acres	2.77
Gross DU/A	9.75
Net Area- Acres	2.17
Net DU/A	12.44
Avg Parking/DU	2.41

Existing Neighborhood Site Conditions and Density Analysis
City of Concord, NH Compiled by: RCH

Field Invesitgation: 3/27/2007
Sheet 5

Block Bounded by Broadway/Allison/Kimball/Humphrey/South

		Assessor Data				Observed Data		Map Derived Data					Calculated Data				Street								Gross	Net
Street	Number	Acreage	#D.U.	Building First Floor Sq. Ft.	Total Living Area Sq.Ft.	#DU	#Parking	Setbacks Front	Left	Right	Rear	Outbuilding Area	Lot Area	Bldg Footprint	Parking Area	Avg Lot Width	Bldg-Bldg Width	Net Lot Open Spac	Percent Open Space	Percent perv.Cove	Bldg SF per DU	Lot Area Per DU	Parking Per DU	Net DU/A	DU/A w/ Street ROW	Net Open Space per DU
Broadway	36	0.25	1	1138	2174	1	3	12	35	5	84	300	10890	1438	780	80	110	8672	80%	20%	2174	10890	3.00	4.00	3.09	8672
	40	0.14	1	928	1824	1	4	20	18	5	15	550	6098	1478	750	90	115	3870	63%	37%	1824	6098	4.00	7.14	4.49	3870
Allison	72	0.14	1	924	1236	1	2	20	5	0	40	400	6098	1324	486	70	100	4288	70%	30%	1236	6098	2.00	7.14	5.31	4288
	74-76	0.10	2	1323	2550	2	4	5	18	12	15		4356	1323	910	70	80	2123	49%	51%	1275	2178	2.00	20.00	13.49	1062
	78-80	0.10	2	1292	2494	2	4	5	12	5	18		4356	1292	700	65	80	2364	54%	46%	1247	2178	2.00	20.00	13.82	1182
	82	0.17	1	1112	1933	1	4	5	80	7	18	550	7405	1662	564	100	80	5179	70%	30%	1933	7405	4.00	5.88	4.19	5179
	88	0.07	1	732	1604	1	2	3	25	5	5		3049	732	450	60	100	1867	61%	39%	1604	3049	2.00	14.29	8.98	1867
Kimball	5	0.21	2	1048	1896	2	8	7	5	30	70	400	9148	1448	730	62	65	6970	76%	24%	948	4574	4.00	9.52	8.14	3485
	6	0.24	1	1139	1903	1	3	5	10	42	100	375	10454	1514	450	80	65	8490	81%	19%	1903	10454	3.00	4.17	3.50	8490
	7	0.21	1	1026	1478	1	2	7	5	17	80	140	9148	1166	300	67	65	7682	84%	16%	1478	9148	2.00	4.76	4.02	7682
	8	0.08	1	1298	2080	1	4	8	20	12	5	330	3485	1628	720	70	65	1137	33%	67%	2080	3485	4.00	12.50	8.32	1137
Humphrey	9-11	0.28	2	1337	2813	2	5	12	60	45	35		12197	1337	1850	145	70	9010	74%	26%	1406.5	6098	2.50	7.14	5.51	4505
	15	0.10	1	787	1657	1	2	15	5	30	20		4356	787	360	72	80	3209	74%	26%	1657	4356	2.00	10.00	7.08	3209
	17	0.10	1	1120	2016	1	2	12	10	10	2	450	4356	1570	180	62	80	2606	60%	40%	2016	4356	2.00	10.00	7.38	2606
South	97	0.18	1	1109	2043	1	5	12	2	30	25	440	7841	1549	600	67	80	5692	73%	27%	2043	7841	5.00	5.56	4.33	5692
	101-101.5	0.22	2	1108	1950	2	6	20	5	30	60		9583	1108	990	62	90	7485	78%	22%	975	4792	3.00	9.09	7.49	3743
	101A	0.23	1	1283	2123	1	6	10	15	20	75	500	10019	1783	1320	70	90	6916	69%	31%	2123	10019	6.00	4.35	3.53	6916
	103	0.14	1	973	1354	1	3	10	5	55	25	300	6098	1273	525	95	90	4300	71%	29%	1354	6098	3.00	7.14	4.72	4300
Total		2.96	23			23	69																			
Avg		0.16		1093	1952			10	19	20	38		7163	1356	704	77	84	5103	68%	32%	1626	6062	3.08	9.04	6.52	4327
Median		0.16		1111	1942			10	11	15	25		6752	1388	650	70	80	4740	70%	30%						4079
Min								3	2	0	2	140	3049	732	180	60	65	1137	33%	16%						1062
Max								20	80	55	100	550	12197	1783	1850	145	115	9010	84%	67%						8672

South/Humphrey/Kimball/Allison		**Total - Both Blocks**
Gross Area -Acres	2.08	4.43
Gross DU/A	4.33	5.19
Net Area - acres	1.35	3.02
Net DU/A	6.67	7.62
Avg Parking/DU	3.67	3.00
Broadway/Allison/Kimball/Humphrey		
Gross Area -Acres	2.35	
Gross DU/A	5.96	
Net Area - acres	1.67	
Net DU/A	8.38	
Avg parking/DU	2.57	

Existing Neighborhood Site Conditions and Density Analysis
City of Concord, NH Compiled by: RCH

Field Invesitgation: 3/27/2007
Sheet 6

Block Bounded by Carter/Broadway/Stone/Bow

		Assessor Data				Observed Data		Map Derived Data					Calculated Data														
Street	Number	Acreage	#D.U.	Building First Floor Sq. Ft.	Total Living Area Sq.Ft.	#DU	#Parking	Setbacks Front	Left	Right	Rear	Outbuilding Area	Lot Area	Bldg Footprint	Parking Area	Avg Lot Width	Street Bldg-Bldg Width	Net Lot Open Spac	Percent Open Spac	Percent Perv.Cove	Bldg SF per DU	Lot Area Per DU	Parking Per DU	Net DU/A	Gross DU/A w/ Street ROW	Net Open Space per DU
Carter	9	0.36	1	984	1681	1	4	5	65	30	58	450	15682	1434	950	127	65	13298	85%	15%	1681	15682	4.00	2.78	2.31	13298
	11-13	0.20	1	1655	2215	1	3	14	12	11	50	540	8712	2195	550	63	115	5967	68%	32%	2215	8712	3.00	5.00	4.23	5967
	15	0.32	1	1326	2652	1	3	70	15	20	70		13939	1326	960	68	160	11653	84%	16%	2652	13939	3.00	3.13	2.79	11653
	17	0.20	1	741	884	1	4	10	40	3	80	550	8712	1291	900	65	70	6521	75%	25%	884	8712	4.00	5.00	4.21	6521
	19	0.22	1	1016	1419	1	4	12	18	10	70	400	9583	1416	1050	66	85	7117	74%	26%	1419	9583	4.00	4.55	3.88	7117
	23	0.22	1	1237	2151	1	3	10	18	7	80	400	9583	1637	750	65	75	7196	75%	25%	2151	9583	3.00	4.55	3.89	7196
	27	0.44	1	910	1747	1	3	15	27	75	75	324	19166	1234	650	72	75	17282	90%	10%	1747	19166	3.00	2.27	2.08	17282
	33	0.23	1	1374	2102	1	6	10	30	3	70	560	10019	1934	1020	65	65	7065	71%	29%	2102	10019	6.00	4.35	3.74	7065
	35	0.18	1	723	1446	1	4	10	28	16	95	480	7841	1203	1620	65	75	5018	64%	36%	1446	7841	4.00	5.56	4.60	5018
	37	0.24	1	1072	1744	1	4	10	27	12	100	480	10454	1552	840	65	80	8062	77%	23%	1744	10454	4.00	4.17	3.61	8062
	39	0.22	1	715	1204	1	2	15	20	10	100	300	9583	1015	750	55	80	7818	82%	18%	1204	9583	2.00	4.55	3.98	7818
	41	0.33	1	900	1428	1	6	10	13	44	100	660	14375	1560	2055	85	130	10760	75%	25%	1428	14375	6.00	3.03	2.64	10760
Broadway	74	0.15	1	1242	2036	1	4	25	5	15	65	380	6534	1622	600	50	110	4312	66%	34%	2036	6534	4.00	6.67	5.10	4312
	76	0.18	1	1360	2166	1	2	25	13	12	50	150	7841	1510	650	60	120	5681	72%	28%	2166	7841	2.00	5.56	4.25	5681
	78	0.13	2	976	1932	2	4	12	10	5	75		5663	976	500	45	95	4187	74%	26%	966	2831	2.00	15.38	11.67	2093
	80	0.10	1	626	962	1	2	65	5	10	35	250	4356	876	850	30	155	2630	60%	40%	962	4356	2.00	10.00	7.84	2630
	82A-82B	0.10	2	1566	3137	2	6	5	10	22	5		4356	1566	500	75	95	2290	53%	47%	1568.5	2178	3.00	20.00	11.84	1145
Stone	28	0.08	1	862	1245	1	3	10	2	18	10	300	3485	1162	400	45	65	1923	55%	45%	1245	3485	3.00	12.50	10.20	1923
	30	0.11	1	1051	1584	1	3	10	0	15	20	500	4792	1551	600	50	70	2641	55%	45%	1584	4792	3.00	9.09	7.69	2641
	32	0.17	1	702	947	1	2	10	10	20	110	225	7405	927	600	50	65	5878	79%	21%	947	7405	2.00	5.88	5.26	5878
	34	0.15	1	576	922	1	3	65	20	3	45	300	6534	876	1300	12	65	4358	67%	33%	922	6534	3.00	6.67	6.46	4358
	36	0.26	1	848	1360	1	4	10	45	5	100	600	11326	1448	800	90	70	9078	80%	20%	1360	11326	4.00	3.85	3.38	9078
	40	0.23	1	1106	1480	1	3	15	20	15	45	400	10019	1506	450	100	70	8063	80%	20%	1480	10019	3.00	4.35	3.70	8063
	44	0.18	1	840	1680	1	4	15	5	10	95	480	7841	1320	700	50	65	5821	74%	26%	1680	7841	4.00	5.56	5.00	5821
	46	0.17	2	1248	2229	2	6	2	2	10	105	576	7405	1824	900	50	50	4681	63%	37%	1114.5	3703	3.00	11.76	10.52	2341
	48	0.36	1	1699	1699	1	6	50	8	8	70	450	15682	2149	600	100	95	12933	82%	18%	1699	15682	6.00	2.78	2.50	12933
	54	0.19	1	715	1000	1	4	10	10	18	105	672	8276	1387	960	50	65	5929	72%	28%	1000	8276	4.00	5.26	4.76	5929
	56	0.17	1	1205	1816	1	4	3	20	4	90		7405	1205	400	50	60	5800	78%	22%	1816	7405	4.00	5.88	5.26	5800
	58	0.17	1	690	1042	1	2	10	3	18	100		7405	690	200	50	65	6515	88%	12%	1042	7405	2.00	5.88	5.26	6515
	60	0.18	1	904	1712	1	6	7	3	20	100	560	7841	1464	1500	50	68	4877	62%	38%	1712	7841	6.00	5.56	5.00	4877
	62	0.08	1	998	1584	1	2	5	2	4	30	100	3485	1098	400	38	60	1987	57%	43%	1584	3485	2.00	12.50	10.50	1987
	62.5	0.12	1	778	1067	1	2	90	0	20	30	150	5227	928	350	20	60	3949	76%	24%	1067	5227	2.00	8.33	7.81	3949
	64	0.22	1	884	1359	1	3	5	3	8	115	560	9583	1444	900	58	60	7239	76%	24%	1359	9583	3.00	4.55	4.11	7239
	68	0.11	1	960	1728	1	2	4	0	3	90	200	4792	1160	200	32	70	3432	72%	28%	1728	4792	2.00	9.09	8.14	3432
	70	0.41	1	808	1293	1	3	5	65	10	105	750	17860	1558	300	110	65	16002	90%	10%	1293	17860	3.00	2.44	2.20	16002
Total		7.18	38			38	126																			
Avg		0.21		1008	1619			19	16	15	73	425	8936	1373	764	61	81	6799	73%	27%	1514	8687	3.37	6.53	5.44	6640
Median		0.18		960	1584			10	12	11	75	450	7841	1416	700	58	70	5929	74%	26%						5929
Min		0.08						2	0	3	5	100	3485	690	200	12	50	1923	53%	10%						1145
Max		0.44						90	65	75	115	750	19166	2195	2055	127	160	17282	90%	47%						17282

Gross Area -Acres	8.90
Gross DU/A	4.27
Net Area - acres	7.31
Net DU/A	5.20
Avg Parking/DU	3.32

Existing Neighborhood Site Conditions and Density Analysis
City of Concord, NH Compiled by: RCH

Field Invesitgation: 3/28/2007
Sheet 7

Block Bounded by Merrimack/Cross/Summer/Community

		Assessor Data				Observed Data		Map Derived Data					Calculated Data														
Street	Number	Acreage	#D.U.	Building First Floor Sq. Ft.	Total Living Area Sq.Ft.	#DU	#Parking	Setbacks Front	Left	Right	Rear	Outbuilding Area	Lot Area	Bldg Footprint	Parking Area	Avg Lot Width	Street Bldg-Bldg Width	Net Lot Open Spac	Percent Open Spac	Percent mperv.Cove	Bldg SF per DU	Lot Area Per DU	Parking Per DU	Net DU/A	Gross DU/A w/ Street ROW	Net Open Space per DU
Merrimack	22	0.22	3	1972	3566	4	6	10	42	5	17		9583	1972	3200	100	65	4411	46%	54%	892	2396	1.50	18.18	14.42	1103
	26	0.22	2	1151	1802	2	6	5	74	9	28		9583	1151	1300	102	63	7132	74%	26%	901	4792	3.00	9.09	7.18	3566
	36-40	0.21	3	1926	4986	6	10	2	22	53	28		9148	1926	3510	112	60	3712	41%	59%	831	1525	1.67	28.57	21.88	619
	42	0.12	3	1452	2904	1	4	2	7	5	35	324	5227	1776	960	42	60	2491	48%	52%	2904	5227	4.00	8.33	6.94	2491
	46	0.22	1	874	1270	1	3	10	16	52	30	676	9583	1550	840	95	65	7193	75%	25%	1270	9583	3.00	4.55	3.64	7193
Summer	31		church										0	0												
	35	0.17	2	1168	2051	2	2	7	7	30	12	100	7405	1268	350	78	63	5787	78%	22%	1026	3703	1.00	11.76	9.31	2894
	37-39	0.12	3	1463	2758	3	4	5	2	12	37		5227	1463	1250	50	62	2514	48%	52%	919	1742	1.33	25.00	20.18	838
	41	0.22	2	1217	2523	2	6	5	0	75	18	940	9583	2157	1850	105	60	5576	58%	42%	1262	4792	3.00	9.09	7.14	2788
	45	0.11	1	1175	2188	1	2	5	17	6	15		4792	1175	300	45	60	3317	69%	31%	2188	4792	2.00	9.09	7.36	3317
	47	0.11	2	1361	2152	2	4	5	10	20	33	484	4792	1845	900	48	62	2047	43%	57%	1076	2396	2.00	18.18	14.54	1023
	49	0.69	2	3171	5466	2	8	72	10	47	80		30056	3171	1625	156		25260	84%	16%	2733	15028	4.00	2.90	2.57	12630
Total		2.41	24			26	55																			
Avg		0.22		1539	2879			12	19	29	30	505	8748	1621	1462	85	62	6313	60%	40%	1455	5089	2.41	13.16	10.47	3497
Median		0.21		1361	2523			5	10	20	28	484	8276	1663	1250	95	62	4411	58%	42%						2788
Min		0.11						2	0	5	12	100	0	0	300	42	60	2047	41%	16%						619
Max		0.69						72	74	75	80	940	30056	3171	3510	156	65	25260	84%	59%						12630

Gross Area -Acres	3.34
Gross DU/A	7.78
Net Area - acres	2.41
Net DU/A	10.79
Avg Parking/DU	2.12

Existing Neighborhood Site Conditions and Density Analysis
City of Concord, NH Compiled by: RCH

Field Invesitgation: 3/28/2007
Sheet 8

Block Bounded by Summer/Cross/Shaw/SteepleView

		Assessor Data				Observed Data		Map Derived Data					Calculated Data				Street								Gross	Net
								Setbacks				Outbuilding	Lot	Bldg	Parking	Avg Lot	Bldg-Bldg	Net Lot	Percent	Percent	Bldg SF	Lot Area	Parking	Net	DU/A w/	Open Space
Street	Number	Acreage	#D.U.	Building First Floor Sq. Ft.	Total Living Area Sq.Ft.	#DU	#Parking	Front	Left	Right	Rear	Area	Area	Footprint	Area	Width	Width	Open Spac	Open Space	perv.Cove	per DU	Per DU	Per DU	DU/A	Street ROW	per DU
Summer	46	0.24	1	1180	1462	1	4	5	12	65	0	625	10454	1805	1080	110	63	7569	72%	28%	1462	10454	4.00	4.17	3.30	7569
Cross	12		school											0												
	16-18	0.29	2	1120	2656	2	6	2	5	40	95	576	12632	1696	1900	87	78	9036	72%	28%	1328	6316	3.00	6.90	5.88	4518
	20	0.16	1	986	1329	1	2	2	24	0	55		6970	986		50	110	5984	86%	14%	1329	6970	2.00	6.25	5.30	5984
	22	0.16	1	1111	1909	1	4	2	17	0	70	550	6970	1661	1260	44	110	4049	58%	42%	1909	6970	4.00	6.25	5.40	4049
	26	0.19	1	1264	1667	1	3	12	0	45	28	288	8276	1552	120	70	105	6604	80%	20%	1667	8276	3.00	5.26	4.34	6604
Shaw	43	0.28	1	552	552	1	1	12	75	48	22		12197	552	180	150	80	11465	94%	6%	552	12197	1.00	3.57	2.73	11465
Steeple View	5	0.13	1	930	1326	1	2	0	4	22	40	120	5663	1050	450	50	52	4163	74%	26%	1326	5663	2.00	7.69	6.30	4163
	7	0.13	1	804	1252	1	3	2	5	22	33	400	5663	1204	1125	50	62	3334	59%	41%	1252	5663	3.00	7.69	6.30	3334
	9	0.13	1	947	1290	1	2	2	2	25	37	625	5663	1572	600	50	55	3491	62%	38%	1290	5663	2.00	7.69	6.30	3491
Total		1.71	10			10	27																			
Avg		0.19		988	1494			4	16	30	42	455	8276	1208	839	73	79	6188	73%	27%	1346	7575	2.67	6.16	5.10	5686
Median		0.16		986	1329			2	5	25	37	550	6970	1378	840	50	78	5984	72%	28%						4518
`		0.13						0	0	0	0	120	5663	0	120	44	52	3334	58%	6%						3334
Max		0.29						12	75	65	95	625	12632	1805	1900	150	110	11465	94%	42%						11465

Gross Area -Acres	2.61
Gross DU/A	3.83
Net Area - acres	1.71
Net DU/A	5.85
Avg Parking/DU	2.70

Existing Neighborhood Site Conditions and Density Analysis
City of Concord, NH Compiled by: RCH

Field Invesitgation: 3/28/2007
Sheet 9

Block Bounded by Summer/Community/Shaw/High

		Assessor Data				Observed Data		Map Derived Data					Calculated Data				Street								Gross	Net
Street	Number	Acreage	#D.U.	Building First Floor Sq. Ft.	Total Living Area Sq.Ft.	#DU	#Parking	Setbacks Front	Left	Right	Rear	Outbuilding Area	Lot Area	Bldg Footprint	Parking Area	Avg Lot Width	Bldg-Bldg Width	Net Lot Open Spac	Percent Open Spac	Percent mperv.Cove	Bldg SF per DU	Lot Area Per DU	Parking Per DU	Net DU/A	DU/A w/ Street ROW	Open Space per DU
Summer	10	0.13	2	1140	2301	2	4	2	12	12	0	624	5663	1764	300	52	58	3599	64%	36%	1151	2831	2.00	15.38	12.51	1799
	12	0.12	2	1098	2566	2	4	10	3	16	32		5227	1098	975	45	68	3154	60%	40%	1283	2614	2.00	16.67	13.71	1577
	14-16	0.23	2	1576	2224	2	5	10	12	12	72	360	10019	1936	2030	63	80	6053	60%	40%	1112	5009	2.50	8.70	7.51	3026
	18-20	0.19	5	2022	4201	5	6	0	10	5	80		8276	2022	3850	52	58	2404	29%	71%	840	1655	1.20	26.32	22.74	481
	22	0.17	1	1068	1303	1	3	10	8	15	53	420	7405	1488	120	50	65	5797	78%	22%	1303	7405	3.00	5.88	5.03	5797
Community	22	0.30	1	784	1568	1	4	10	22	46	78	576	13068	1360	1400	98	62	10308	79%	21%	1568	13068	4.00	3.33	2.81	10308
	24-28	0.56	4	1506	3378	16	18	15	10	20	15		24394	1506	3850	180	95	19038	78%	22%	211	1525	1.13	28.57	24.12	1190
High	5	0.17	1	1045	1441	1	2	5	23	18	32		7405	1045	494	66	47	5866	79%	21%	1441	7405	2.00	5.88	4.99	5866
	11	0.53	1	1225	1705	1	4	5	32	113	28	1024	23087	2249	550	175	46	20288	88%	12%	1705	23087	4.00	1.89	1.64	20288
	21	0.25	1	1188	1556	1	2	5	5	40	56	375	10890	1563	100	82	53	9227	85%	15%	1556	10890	2.00	4.00	3.48	9227
Total		2.65	20			32	52																			
Avg		0.27		1265	2224			7	14	30	45	563	11543	1603	1367	86	63	8573	70%	30%	1217	7549	2.38	11.66	9.86	5956
Median		0.21		1164	1965			8	11	17	43	498	9148	1535	763	65	60	5960	78%	22%						4412
Min		0.12						0	3	5	0	360	5227	1045	100	45	46	2404	29%	12%						481
Max		0.56						15	32	113	80	1024	24394	2249	3850	180	95	20288	88%	71%						20288

Gross Area -Acres	3.42
Gross DU/A	9.36
Net Area - acres	2.60
Net DU/A	12.31
Avg Parking/DU	1.63

Existing Neighborhood Site Conditions and Density Analysis
City of Concord, NH Compiled by: RCH

Field Invesitgation: 3/28/2007
Sheet 10

Block Bounded by Summer/SteepleView/Shaw/Community

		Assessor Data				Observed Data		Map Derived Data					Calculated Data				Street								Gross	Net
Street	Number	Acreage	#D.U.	Building First Floor Sq. Ft.	Total Living Area Sq.Ft.	#DU	#Parking	Setbacks Front	Left	Right	Rear	Outbuilding Area	Lot Area	Bldg Footprint	Parking Area	Avg Lot Width	Bldg-Bldg Width	Net Lot Open Spac	Percent Open Space	Percent Perv.Cove	Bldg SF per DU	Lot Area Per DU	Parking Per DU	Net DU/A	DU/A w/ Street ROW	Open Space per DU
Summer	24-26	0.17	5	2770	5252	5	7	2	3	1	48	240	7405	3010	1800	50	65	2595	35%	65%	1050	1481	1.40	29.41	25.16	519
	30-32	0.35	8	3060	6802	8	9	10	22	28	56	500	15246	3560	4150	102	75	7536	49%	51%	850	1906	1.13	22.86	19.58	942
	36	0.17	2	1086	1830	2	4	7	3	18	50	120	7405	1206	2750	50	65	3449	47%	53%	915	3703	2.00	11.76	10.07	1725
	40	0.14	1	936	1149	1	1	5	7	57	10	364	6098	1300	350	100	60	4448	73%	27%	1149	6098	1.00	7.14	5.07	4448
Steeple View	6	0.21	5	1947	4148	5	7	0	8	38	35		9148	1947	2520	88	50	4681	51%	49%	830	1830	1.40	23.81	19.19	936
	8	0.34	3	1164	2237	3	6	10	70	10	67		14810	1164	3300	100	60	10346	70%	30%	746	4937	2.00	8.82	7.55	3449
	16	0.46	1	1241	1641	1	4	0	140	5	77	528	20038	1769	1540	105	55	16729	83%	17%	1641	20038	4.00	2.17	1.92	16729
Shaw	33	0.16	1	896	896	1	3	10	18	24	26	300	6970	1196	330	100	82	5444	78%	22%	896	6970	3.00	6.25	4.60	5444
Community	19	0.35	3	1160	2320	3	6	3	7	55	82		15246	1160	1080	100	62	13006	85%	15%	773	5082	2.00	8.57	7.36	4335
	25	0.27	1	768	768	1	4	25	28	18	95	168	11761	936	1000	80	95	9825	84%	16%	768	11761	4.00	3.70	3.17	9825
	29	0.34	2	1115	2389	3	6	10	60	7	53		14810	1115	300	95	75	13395	90%	10%	796	4937	2.00	8.82	7.60	4465
Total		2.96	32			33	57																			
Avg		0.27		1468	2676			7	33	24	54	317	11722	1669	1738	88	68	8314	68%	32%	947	6249	2.18	12.12	10.12	4802
Median		0.27		1160	2237			7	18	18	53	300	11761	1206	1540	100	65	7536	73%	27%						4335
Min		0.14						0	3	1	10	120	6098	936	300	50	50	2595	35%	10%						519
Max		0.46						25	140	57	95	528	20038	3560	4150	105	95	16729	90%	65%						16729

Gross Area -Acres	3.80
Gross DU/A	8.68
Net Area - acres	2.91
Net DU/A	11.34
Avg Parking/DU	1.73

Rumford Street & North Spring Street **Block 1**

N

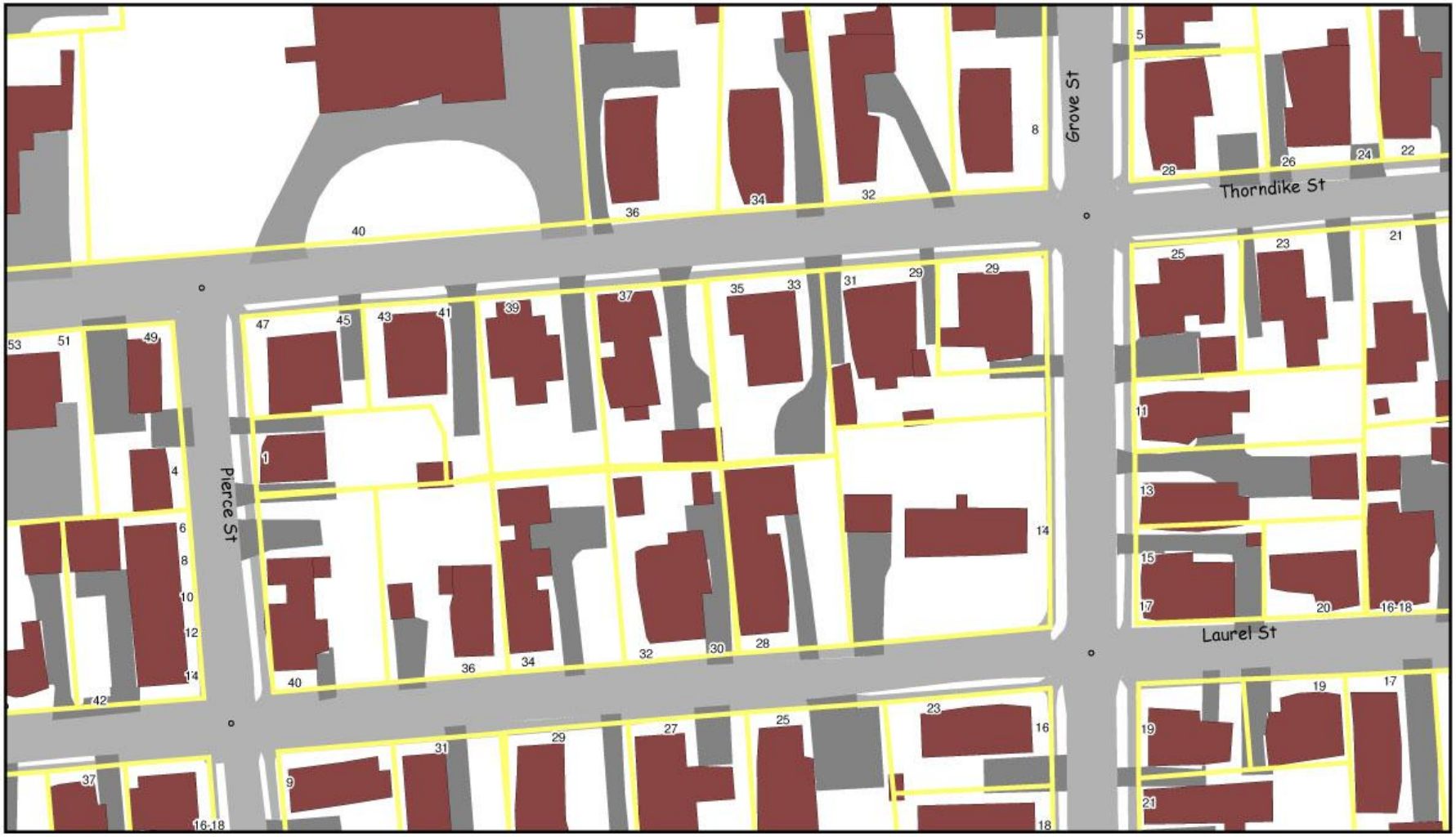
50 25 0 50 Feet


Holt Street & Pine Street
Block 2
N
50 25 0 50 Feet
Holt St
Pine St
Warren St
School St
W Washington St

Merrimack Street & Rumford Street **Block 3**

N

50 25 0 50 Feet

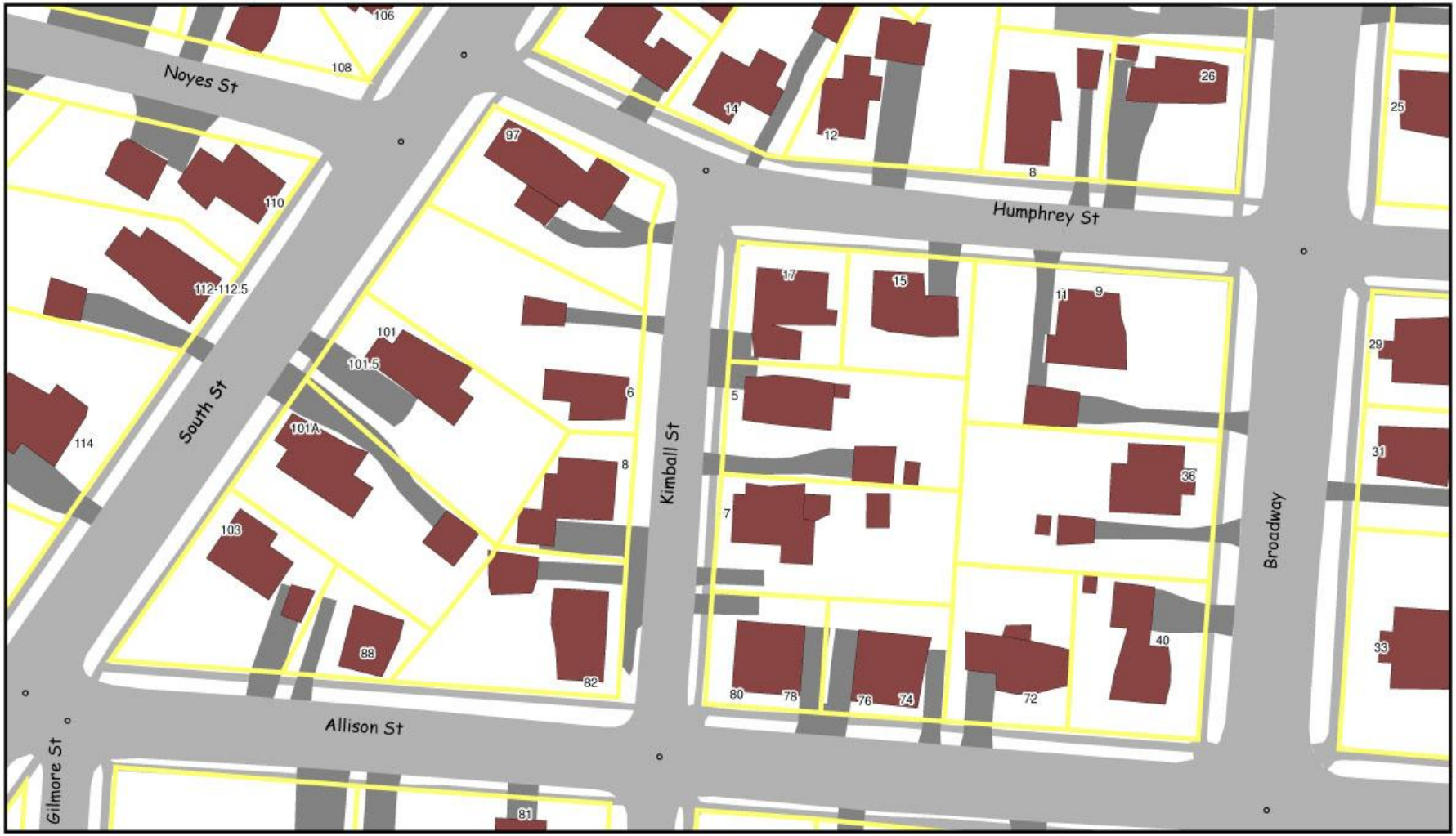


Pierce Street & Grove Street

Block 4

N

50 25 0 50 Feet



South Street & Broadway

Block 5

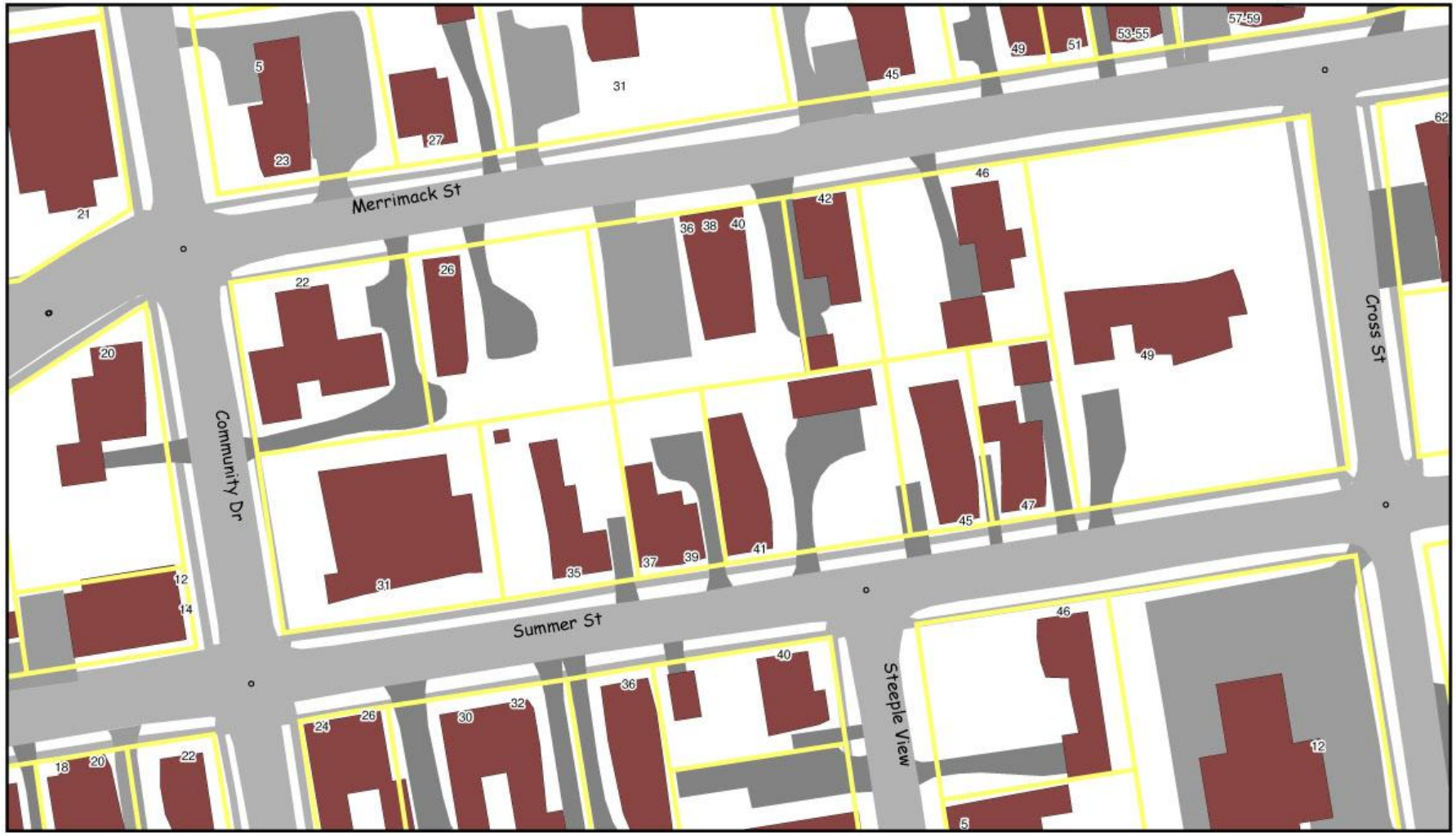
N

50 25 0 50 Feet

Carter Street & Stone Street **Block 6**

N

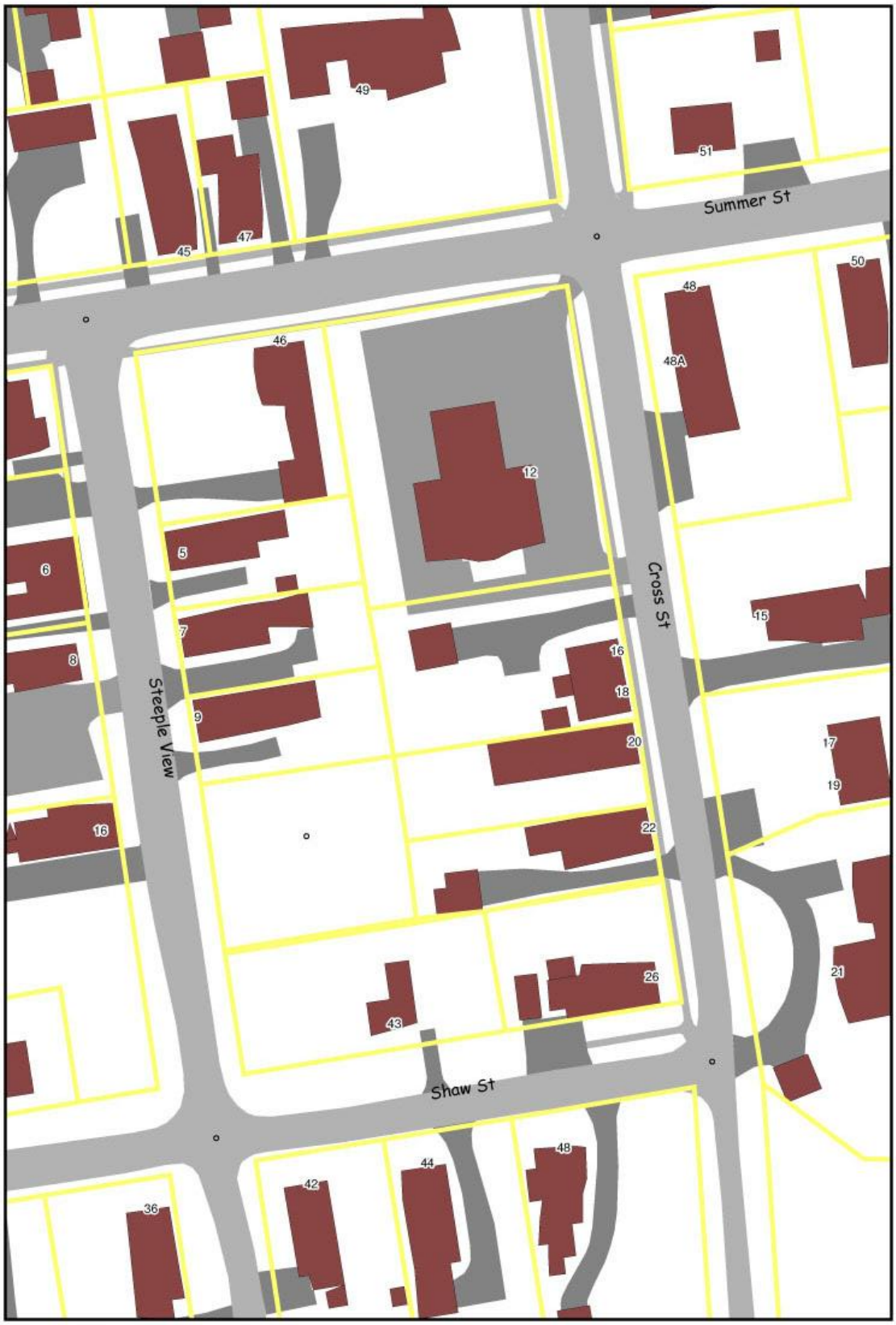
100 50 0 100 Feet



Summer Street & Merrimack Street

50 25 0 50 Feet

Block 7



Cross Street & Steeple View **Block 8**

N

50 25 0 50 Feet

Community Drive & High Street **Block 9**

N

50 25 0 50 Feet


Steeple View & Community Drive
Block 10
N
50 25 0 50 Feet
Community Dr
Shaw St
Summer St
Steeple View